AMERICAN VETERINARY REVIEW.

JULY, 1903.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, May 20, 1903.

ANTIAPHTHOUS SEROTHERAPY. — As long as foot-and-mouth disease has by the recent outbreak awakened great interest in the ranks of our profession, I believe that, as a matter of actuality, the following extract from a conference made by Prof. Nocard before the Concours Général Agricole, and which was printed in the *Revue Générale de Médecine Vétérinaire*, will be interesting.

After a few remarks explanatory of the causes of contagion and of the propagation of the disease from the show as a starting point, notwithstanding all the greatest care taken and the enforcing of severe rules, and as one means of protection against the possibility of this propagation, Prof. Nocard said :

"It is nearly two years since the Secretary of Agriculture has demanded of Dr. Roux and myself to study scientifically the difficult problem of the prophylaxy of foot-and-mouth disease, for which he placed at our disposal all necessary material means. We have associated in our work, two of our students, Messrs. Vallie and Carri. Since nearly two years, we four have done our best; but, unfortunately, we must acknowledge it, we are not much more advanced than when we began.

"Until now the microbe of foot-and-mouth disease has escaped all our researches, as well as those of our predecessors. This mysterious agent, so abundant in aphthous products that

serosity of the aphthæ, diluted in the proportion of 1 in 10,000, is still able to give the disease, yet we have not succeeded in seeing it nor in cultivating it outside the living animal. It is not surprising that it cannot be seen; it is so small that it passes through the pores of the most dense china filters! It is probably beyond the limits of visibility. This would not be of great importance if it would grow outside the organism, or multiply in our media of artificial cultures! I repeat, unfortunately all our attempts have remained fruitless. And this failure is to be much regretted, because once master of the specific agent of the microbe of a contagious disease, there are many chances to master soon the disease itself: there are many chances for succeeding in reducing the virulence of the microbe, so as to transform it into vaccine. If even failure in obtaining this vaccine, the ideal of prophylaxy, exists, the possibility of obtaining great quantities of virulent cultures makes easy the production of a serum truly efficacious, either to the preventive or curative point of view. It would be superfluous to remind you of the marvelous results given by serotherapy in the struggle against diphtheria, bubonic plague, rinderpest, rouget of swine, tetanus!

"We have not reached the principal object of our researches, viz., the discovery or the culture of the microbe which, alone, would allow the obtention of a vaccine or the preparation of an efficacious serum in sufficient quantity to answer all needs. Perhaps we never will! It is seven years since one of the first bacteriologists of Germany, Professor Löffler, engaged in this hard work, and up to now he has not solved the problem.

* * *

"Yet, our efforts have not been entirely fruitless. Like Löffler and many others, we have observed that the serum of animals recovered from a severe attack of the disease possesses a certain limiting action towards the aphthous virus; inoculated in large doses to fresh bovines, it increases in an appreciable manner their natural resistance toward a later virulent inoculation; it reduces the severity of the disease thus produced, and sometimes, if the injected dose is sufficient, it prevents the ap-

parition of the disease. But the activity of this serum is so weak that, to obtain good effects, considerable quantities must be injected, such as 500, 800 and 1000 cubic centimetres.

"Like Löffler, we have also observed that in increasing the immunity of animals recovered from a severe attack of the disease by injecting them, several times, with large quantity of aphthous virus, the preventive and curative quality of the serum is considerably increased; and we have succeeded in obtaining a virus with such power, that, injected in doses of 20 c.c. to fresh bovines, it protects them surely from the effects of the inoculation of a dose of virus very superior to that which gives the disease with certainty to *witnesses*. These observations, repeated several times in the laboratory, have been confirmed in practice also.

"Last year, foot-and-mouth disease appeared in the Concours, upon two animals; it was on the day before closing. Fifteen other animals belonging to the owners of those two and cared for by the same individuals who attended the sick, received the injections of our serum. Not one became diseased; it is probable that several of them had already the germ of the affection in them at the time they received the injection; the serum arrested the evolution of the germ. The animals that were sick had been in the immediate neighborhood of others belonging to various owners; these were also submitted to the same preventive treatment; altogether 90 of them received the injections; *none of them became diseased.* We have learned that ten among the owners had their farms infected a few days after the return from the show. . . . But the 90 inoculated were here and there in the show, among those that became sick afterwards; like those, they had been exposed to contract the germ of the affection; then have I not the right to say that if they escaped it was thanks to the injection of serum?

"It is a conclusion which imposes itself, not only by the above cases, but again by the three following ones:

"Mr. M. had five animals exposed, among them a bull which he hoped to sell; he asked us to inject the four others;

the bull not being sold, he was taken back home with the other four; scarcely arrived, he took sick; not one of the four others had the disease.

"Mr. C. had asked us to treat his cows; two received the serum, but listening to the remarks made by friends who told him of all kinds of complications, and among them the loss of milk, Mr. C. stopped the treatment. Result, the ten cows not injected had foot-and-mouth disease; the other two only that had been treated remained healthy and kept their milk. This year Mr. C. was one of the first to ask for the serum.

"Mr. L. had four bovines inoculated while at the show. Shortly after his return home, the disease broke out in his barn; all his stock were sick except the four which had been treated.

"Here is another case. A large breeder, Mr. C., had the disease in his pastures. Rightly fearing the entire infection of his stock, he asked us to treat his animals and 80 were injected. He reports the results as follows: 'Success has been complete. The subjects treated, mixed with others that had the disease, remained healthy. The affection is very severe here; I have lost two animals of two-and-a-half years old; two of the treated cows were in the same lot as those; they remained perfectly free from disease. Inoculated rams have not been affected, while all the ewes of the same flock are sick. Out of a lot of 6 bulls, five had the serum; the sixth, left as witness, is the only one that took the disease. My milking cows, for which I care much, have all remained healthy. . . . To resume, out of the 80 injected animals, none have yet been sick, while in any other part of my establishment, the disease is still progressing.'

"I might mention more similar cases; but these are sufficient, I hope, to convince you of the efficacy and innocuity of the serum.

* * *

"But now I hear you say: 'Well, is the problem so difficult of controlling aphthous fever solved? Why is it that a treat-

ment which gives such results is not applied all over the country?'

"Why? I will tell you; and it is to tell you that I have accepted the opportunity to make this communication.

"No, the problem is not solved! And it is far from being so; you will understand it.

"The antiaphthous serum is very efficacious; that is a sure fact; its good action manifests itself immediately; but, as for all serums, the immunity that it gives is very short; it lasts scarcely fifteen days; after that, most of the injected animals may again contract the disease.

"Do you understand now, why the serum treatment cannot be applied in practice? Think of the large number of animals which, in the smallest epizoöty, should receive, every fifteen days at least, one injection of 20 c.c. of serum and calculate the enormous quantity of serum that would be required.

"In the present condition of the production of the serum, it is materially impossible. It would become possible, and yet remain difficult, if we would succeed in obtaining cultures of the microbe. Until then, it is no use to think of it.

"You see how very small are the results obtained when compared with those we dream of—without daring to hope for the early realization of our wishes.

"But small as they are, we believe that they can be utilized to some extent. If the treatment with serum cannot be applied in practice, because of the short duration of the immunity it gives, and of the small quantity at our disposal, it is not so with the peculiar condition of general or regional shows. With them it is no longer the question to fight against an epizoöty already existing; it is simply to prevent the possible creation of new centres of infection. It is no question to immunize the animal population of a region, where tens of thousands may exist; it is simply to inject a few hundreds of animals; this is not above our resources.

"If you wish to guard yourself against the always threatening danger of carrying the disease home, we will inject your

stock, but remember that they will be protected only for fifteen days to the maximum; and that after that they may take the disease if exposed to the contagion."

* * *

ASEPTIC VETERINARY SURGERY.—Recently, before the Central Veterinary Medical Society of London, Mr. F. Hobday, well known to us by his many articles on surgical cases, read a paper on "Aseptic Veterinary Surgery," published in the *Veterinary Record*, which no doubt must have proved very interesting, and, although it brought about important dissident opinions and discussions, there are in it points and advice of great interest. The author treated successively the essential conditions relating to instruments, to the animal to be operated upon, and the operative field, and finally to the surgeon himself. In relation to the cares of the skin, among the first he recommends the use of the razor: "if one aims at a long series of uninterrupted successful wound unions the use of the razor is an absolute necessity." All sources of irritation must be removed, as "this irritability does not exist if foreign bodies are not present, and even sutures are not necessarily a source of irritation, if not contaminated. So long as the wound is surgically clean a dog and even a monkey will not touch the sutures; the presence of the pus-producing organism is the main thing to avoid."

In relation to the closing of the wound, Mr. Hobday wants the stitches close together, and if some swelling seems to occur, do not fear that it is pus, don't be hasty to probe because "recollect that it cannot be pus, if you have been surgically clean when operating and have hermetically sealed the wound so thoroughly afterwards that contamination from the outside cannot take place."

And, then, what of the old saying that wounds cannot be protected from rubbing, biting or licking on the part of the animal. The lecturer says: "It is a most rare thing for an animal to interfere with its sutures, if only the wound is aseptic."

The lecture is concluded by the following *résumé:* For the instruments, sterilize them thoroughly by boiling or soaking in

disinfectant solution; for the operator, scrub and soak hands and nails, remove grease from the skin with ether or alcohol, do not touch anything which has not been rendered aseptic until the operation is completed; for the animal, shave the skin, scrub it thoroughly with disinfectant solution, wash it with ether, alcohol, etc., to remove the grease; wash again the operating field, dry it; do not touch anything during the operation unless it has been disinfected; apply stitches as close as possible, specially in wounds of cavities which secrete or contain fluid.

There is no doubt that to the busy practitioner the preceding *résumé* will appear difficult to comply with; question of time, question of expenses are and will remain for many plausible reasons for objection, but still, when one takes into consideration the very great success that has been obtained and that has been recorded, it may be asked if one will be deserving the true qualification of good surgeon if he ignores the principles recommended by Mr. Hobday.

* * *

TRAVELING SCHOLARSHIPS.—I do not know which of the two nationalities, England or America, can be considered the most practical. At any rate, both are, and when one good thing is started by one, it is rare if the other does not follow by "ten or more better."

Some time ago (Vol. XXV, No. 12) I was alluding to an opening address of the Royal College of Veterinary Surgeons of London, where among many good sound remarks, the learned Professor Crookshank said: "· · · · · Traveling scholarships would be of quite as much advantage to veterinary as to medical students;" and I was asking why could not such prize be offered by our colleges instead of the free scholarship? Why could not some generous benefactor be found to defray at least part of the expenses?

The suggestion made by Prof. Crookshank has been realized in England, as at a meeting of the Council of the Royal Veterinary College, held in April last, the announcement was made, that an annual grant of 2000 francs was to be given to any re-

cent graduate of the college to follow for one year the course of the Alfort or Berlin school. The necessary funds were made up by subscription.

Now is the time for America to go—how much better—for the same object.

* * *

TEREBRATING EPITHELIOMA.—A few days ago I was looking over some volumes of the REVIEW of years ago, when, in Volume IV, I came to the various articles which were published in relation to the famous case of the trotting horse "Prospero" —famous because of the great name of the horse and of the discussion and discrepancies which took place in relation to the nature of the disease and also by the sadness of the few last weeks of the life of "Prospero," dying from starvation and profuse hæmorrhage. Was it sarcomatous growth? Was it carcinomatous neoplasm, and their sequelæ? It was not microscopically decided.

Perhaps the specimen that I had the opportunity to examine lately when presented by Mr. G. Petit, at the Société Centrale, will throw some light on "Prospero's" case, although it is over twenty years old, as it is almost a perfect repetition of that obtained from the dead trotter. Indeed in that specimen the tumor was on the upper jaw of a five-year-old horse. It seemed to have started near the fourth or fifth molar, which were very loose and ready to drop out. The palate was thickened and infiltrated and partly destroyed, allowing direct communication with the right nasal fossa. The tumor had produced a projection of the outside plate of the maxillary bone, so that the face was much deformed. On removing the plate the growth was exposed, enormous in size, filling the lower maxillary sinus, irregular, mammillated and covered with pus. The superior maxillary and frontal sinuses were intact, but would have also become involved, if the animal had been allowed to live, as "Prospero" did.

The histological examination showed that it was a case of malpighian *epithelioma* with epidermic globules, which, accord-

ing to Mr. Petit, must have had its origin either in the paradental epithelial remains or in the buccal or gingival epithelium, but from its mode of development seems to have been derived directly from the latter. A. L.

A STATE COMMISSION OF ANIMAL INDUSTRY FOR NEW JERSEY.

The proposition of President Wm. Herbert Lowe, made in his annual address before the Veterinary Medical Association of New Jersey, January 8th, 1903, in favor of the establishment of a State Commission of Animal Industry, is meeting with strong endorsement and support from those most competent to judge of the wisdom of the proposition. Among the State officials who were present on that occasion and listened to President Lowe's remarks was Prof. Edward B. Voorhees, President of the State Board of Agriculture of New Jersey, who did not hesitate to supplement what the speaker had said and gave several reasons why it was to the best interests of the State to have all affairs appertaining to the animal industry, including all the diseases of animals, vested in one body.

We find in the Report of the New Jersey State Board of Agriculture, which has just come from the printer's hands, the able address of Professor Voorhees delivered January 14, 1903, before the New Jersey State Board of Agriculture, in which he alludes to this important matter in the following clear and convincing manner: "It is abundantly evident from the experience of the past year, that the powers of this Board should be so enlarged as to include all diseases of animals, or there should be some known authority for the detection and control of animal diseases other than tuberculosis. Under present conditions, should an unknown or especially contagious disease break out in any section of the State, there is no authority known to all to whom the interested parties may apply for information and relief, and be sure that prompt assistance will be given. Letters are sent either to the officers of the Experiment Station,

State Board of Agriculture, or to the State Tuberculosis Commission, and are promptly referred to the State Board of Health, though by the time they get to this office, which is charged with the duty of investigation, certain animal diseases other than tuberculosis, the disease has either spread rapidly or the animal will have succumbed, or both. This matter has been brought strongly to the attention of the Board this year, and had the dread foot-and-mouth disease, now present in New England, broken out in this State, at least a week or ten days would have elapsed before anyone could have gotten at the proper authorities, and in the meantime, not only would there have been the spread of the disease, resulting in the sickness and death of animals, but it would have involved an enormous expense in the stamping out of the disease and destroying the germs. If there is a logical reason why the State Board of Health should be charged with work of this character, if it is so charged, then the fact should be made so prominent that everyone in the State, particularly the veterinarians, should know to whom to apply in case of suspicious diseases. I make these suggestions, not because the officers of the State Board are anxious to increase their labors and responsibilities, but the interests of the farmers and of the State may be conserved."

The plan that seems most feasible is to enlarge the scope of the State Tuberculosis Commission, which comes under the State Board of Agriculture, so as to include all affairs of the animal industry, including all dieases of animals, thus establishing and constituting the State Commission of Animal Industry.

THE PROPOSED MUTUAL BENEFIT SOCIETY.

Dr. William Dougherty, of Baltimore, Md., whose long service in behalf of the best interests of the American veterinary profession is well known to all who know anything of veterinary history, will present at the Ottawa meeting of the American Veterinary Medical Association for consideration a plan of formation of a Mutual Benefit Society for the veterinarians of

America. This step has been frequently advocated in the pages of the REVIEW, and we are delighted that so able and loyal a man as Dr. Dougherty has undertaken to put the ball in motion, and we fear not that at every revolution it will gain impetus, ending in a great movement that will be of incalculable benefit to the members of the profession. President Winchester called attention to the necessity for such an organization in his address at Minneapolis, and Chairman Ackerman, of the Committee on Intelligence and Education, emphasized it. It appears that the time is now ripe for action, and we trust that the Association will undertake the establishment of the Society upon a solid business foundation.

FRANK H. MILLER, D. V. S., whose valuable contributions to canine pathology a few years ago were so greatly appreciated by our readers, has prepared for the August REVIEW a practical paper upon the ankylostoma of the dog, entitled "Malignant Enzoötic Anæmia of the Kennel Dog, due to Infection with Blood-Consuming Worms (Dochmius Trigonacephalus), the Direct Clinical Homologue of Egyptian Chlorosis and So-Called Tunnel-Workers' Disease of Man." The Doctor is specially well qualified to write upon such subjects, he being a graduate of McGill, a post-graduate of the Berlin Clinic for Small Animals, and with an extensive exclusive canine practice in New York, being at the present time veterinarian to the Westminister Kennel Club.

TWO MEN are reported as having died during the past month in Newark from glanders contracted from horses having that disease. This is one of the strongest arguments in favor of the establishment of a State Commission of Animal Industry under *veterinary directorship* that could be advanced. Public health as well as the animal industry demand that the Commission have power to deal with all diseases of animals that are dangerous to man as well as to beast.

SOFUS B. NELSON, D. V. S., professor of veterinary medicine and comparative pathology at the Washington State Agricultural College, at Pullman, has been elected as President of the State Board of Health, of which he has been Secretary for a number of years. Professor Nelson is a valued member of our profession, and is a frequent attendant at the annual gatherings of the A. V. M. A., to the literary programme of which he has contributed many valuable papers.

THE BOSTON WORK HORSE PARADE.—The initial work horse parade of the Boston Work Horse Parade Association, which was held at Boston, June 6, was a success far beyond expectations. The object of the association is to benefit working horses, and the officers, who receive no compensation for their services, are confident that the parade has already done much toward helping the hard working animals. The most important feature of the parade was the certificate given to drivers, who, according to a signed statement from the owners, had driven the horses exhibited by them for a year or more before the parade, provided that the horses appeared serviceably sound and in good condition. That the scheme will be a success as far as the care of the driver is concerned is almost assured, for already advertisements have appeared in a Boston paper for teamsters, stating that preference would be given to those holding certificates of the Boston Work Horse Parade Association. The parade was the awakening of interest among owners and drivers in the welfare and appearance of their horses, to induce more humane treatment, and to incite consideration from the general public. Great interest was taken in the parade all over the city and to the drivers of the 450 teams which took part in the parade is due largely the success of the affair. Each individual acted as a manager and through the coöperation of the drivers a large share of the burden was removed from the officers' shoulders. The association will hold its second parade next year, and the officers expect to have 800 or 1000 entries. It would be an excellent thing for horse owners in our great city to start an association like the Boston one. The good work of the Boston Association can readily be seen, and as there is any amount of drivers in Greater New York who do not hesitate at whipping their animals, a formed body to act as a protective association would surely benefit the hard working horse.

ORIGINAL ARTICLES

AN EXPERIMENT IN THE USE OF AIR AND OXYGEN IN CHECKING THE COURSE OF TUBERCULOSIS IN TUBERCULIN-REACTING CATTLE.*

By Veranus A. Moore, M. D., New York State Veterinary College, Cornell University, Ithaca, N. Y.

A study of the lesions found in animals killed after the reaction to tuberculin shows that in many herds a very large percentage of the cattle are but slightly affected. This together with the slow development of tuberculous lesions suggested that possibly the course of the disease might be checked by either increasing the resistance of the animal or deleteriously affecting the vitality of the infecting organism itself. The reported experience of practitioners in treating this disease medicinally gives little hope of success with the ordinary therapeutic agents. In a certain few cases where the lesions are restricted to one or more subcutaneous lymph glands relief has come from surgical interference, but these cases are so few that the method is of very little general value. It has been found, however, that a small number of reacting animals, after a period of a few months, fail to react a second time, and if the climatic and hygienic conditions are favorable the number that recover appears to be somewhat larger. However, the percentage of such natural and unaided recoveries is so small that cattle owners cannot afford to isolate and care for all their reacting animals for the few that may recover unless they are in some way self-supporting. This has been found possible under certain conditions as in the Bang method.

The good results that have frequently followed laparotomy in cases of human tuberculosis and the results of investigations by Dr. Corson on the effect of gases when absorbed by serous

* This experiment was made for the State Department of Agriculture and will appear in detail in the report of that department for 1902.

membranes upon certain neoplasms, led to the conclusion that possibly the inflation of the abdominal and thoracic cavities of reacting cattle with air or oxygen would be beneficial. The experiment herein described was undertaken to determine this point.

In March, 1902, twenty cows that had reacted to the tuberculin test were given by the owner to Dr. Ambler for the Department of Agriculture, to be used for experimental purposes in the treatment of tuberculosis. One animal was killed in the advanced stage of the disease. The remaining nineteen were taken to Chatham, where they were kept under the immediate supervision of Dr. H. B. Ambler. They were placed in a new, well-lighted and ventilated barn, where they were kept until August 1st, when they were put on pasture land. While they were in confinement they were allowed to stand during the day in an open yard adjoining the barn. They were fed hay, with a small amount of grain. A number of them were delivered during the first three months. They were milked until August 1st, the time they were placed on the pasture. None of the calves born of these cattle were tuberculous, as determined by careful post-mortems by Dr. Ambler.

The cattle were divided into three groups containing five, seven and seven respectively. The animals in the group of five were kept for controls. Those in one of the other groups were treated with inflations of oxygen and those in the other with air. The abdominal cavity and one of the pleural cavities were filled at each treatment, the right and left pleural cavities were inflated alternately. The technic consisted simply in clipping the hair over the place of operation, disinfecting the skin and insering a small trochar and canula. The air was forced in by attaching the canula to a large bicycle pump that was worked slowly, and the oxygen by connecting the canula to the oxygen cylinder. The inflations were made at intervals of from two to four weeks from May 7th to September 5th. The cattle were all killed and carefully examined October 16th. The animals were first tested with tuberculin March 25, 1902. There were 24 in

the herd and 20 reacted. One animal was so poor that it could not be taken to Chatham. It was killed and examined by Dr. Ambler, who found extensive tuberculous lesions. The appended table, giving the results of the original tuberculin test, contains the data concerning the breed, age and weight of the animals. All but two were in fairly good condition. Those were quite poor.

The animals were divided into three groups, one of which contained the control animals and the other two those that were placed under special treatment. The control animals were kept under the same conditions that the others were, excepting the treatment. The appended tables contain the effect produced by the treatment on the pulse, respiration and temperature of each animal, and after each of the treatments except the last. The immediate effect, which passed away in a few hours, consisted in a rapid pulse, increased respiration, and in a few cases of a slight rise in temperature.

The animals were treated for the sixth time September 4, 1902. As they were at pasture some distance from Chatham it was impossible on account of other imperative work to take the temperature, pulse and respiration, before and after the administration of the gases.

Two of the animals died apparently as the direct result of the air inflation. No. 572 died June 9th, about ten minutes after the inflation was completed. She was in very poor condition, although the autopsy showed that the tuberculous lesions were few and slight in extent. The immediate cause of death seems to have been pressure. September 4th No. 514 died very suddenly during the process of inflating the right pleural cavity. In this case the examinations failed to reveal the cause of death, but it is supposed that air was forced into a blood vessel. Death occurred, after the first symptoms appeared, as quickly as it would from a well directed bullet. From the table containing the list of affected organs it will be observed that the lesions were slight. These were the only animals that exhibited any alarming symptoms following the treatment.

The cattle were tested with tuberculin by Dr. Ambler, July 28th, and again October 14, 1902. The results of these tests are given in the appended tables.

It will be observed from the charts that seven animals did not react July 28th, and that twelve failed to react October 14th. It is further observed that at the last test only two of the controls reacted. It is important to state that for the first three months the animals receiving the oxygen did much better than the others. In July the eight animals that were in the best condition included the seven treated with oxygen. At the time of the last test (October 14) the cattle were, with two exceptions, in a good condition for animals kept at pasture, although the oxygen-treated ones still presented the best appearance. They would all have passed on a physical examination as being perfectly sound and healthy, and from their general appearance there was no evidence of disease, with possibly the exception of the two mentioned. They were all killed and carefully examined October 16th. The following table contains a list of the organs affected in each of the seventeen animals killed at this time and the two that died during the treatment.

The autopsies showed that the lesions were not excessively advanced in any of the animals but, on the contrary, they were small although in a number of cases they were quite widely distributed. In one instance, No. 541, the lesions on the omentum were acute but in all the others they were restricted and chronic in nature. In a number of cases the cellular infiltration around the tuberculous foci, was unusually marked, suggesting encapsulation and healing. It has not been possible, however, to differentiate the reacting from the non-reacting animals by means of the gross or microscopic examination of the diseased tissue.

Although the lesions in the non-reacting animals suggested a tendency to encapsulation it was desirable to determine whether the tubercle bacteria were present and if so as virulent as they were in the case of the reacting animals. To determine

Tuberculin Test of Twenty-Four Cattle in One Dairy.

Animal Number.*	Breed.	Age, years.	Sex, M. or F	Weight, lbs.	Temperature Before. Date, Mar. 25				Tuberculin Injected. Date, Mar. 25.		Temperature After Injecting Tuberculin. Date, March 26, 1902.				
					2 p. m.	4 p m.	6 p. m.	8 p m	Hour.	Amt.	6 a. m.	8 a. m.	10 a m.	12 m.	2 p. m.
591	Grade.	6	F.	900	101.8	101	101.3	100.8	8 P.M.	2 c.c.	107.2	105.8	105.3	106.3	106.4
556	Grade.	6	F.	800	102	101.8	102	101.4	8 P.M.	2 c.c.	104.6	106.8	107	106.6	106.6
582	Grade.	12	F.	950	101.2	101.6	101	101.2	8 P.M.	2 c.c.	105.5	106.3	105.8	105.6	105
533	Grade.	4	F.	800	101.7	101	101.4	100.5	8 P.M.	2 c.c.	105.3	106.9	106.5	106	105.8
583	Grade.	5	F.	900	102.4	102.7	102	101.2	8 P.M.	2 c.c.	104.1	105.7	104	104	104.4
543	Grade.	3	F.	900	102	101.3	101.4	101.6	8 P.M.	2 c.c.	105.2	106.7	107.2	106.6	106.8
589	Grade.	3	F.	800	101	101.7	101.2	101.5	8 P.M.	2 c.c.	101	105.2	106.6	105	104.4
567	J.	8	F.	900	101.8	102.6	102.3	102	8 P.M.	2 c.c.	105.8	106.2	103.2	104	104.8
514	Grade.	2	F.	700	101.5	101.6	102	101.7	8 P.M,	2 c.c.	106 7	105.6	106	107	106.3
540	Grade.	4	F.	800	100.8	101.7	101.4	101	8 P.M.	2 c.c.	101.8	103.3	104	104.7	106.4
572	Grade.	2	F.	800	101.4	101.6	101.8	101.4	8 P.M.	2 c.c.	104	104.4	105.5	105.8	106.4
563	Grade.	3	F.	800	102	103.3	103.6	103.8	8 P.M.	2 c.c.	106.6	107	107	107	106.7
510	Grade.	3	F.	800	102	102.2	101.8	102	8 P.M.	2 c.c.	107	106.6	106.4	107	106.8
541	Grade.	6	F.	900	102	102	102.6	102.4	8 P.M.	2 c.c.	105	105.8	104.7	104.6	105.6
562	Grade.	3	F.	800	101	101.6	101.3	100.8	8 P.M.	2 c.c.	102.1	104.4	106.2	105.6	105.4
553	Grade.	4	F.	850	101	101.4	101.4	101.2	8 P.M.	2 c.c.	102	104.5	106	105.8	106
598	Grade.	9	F.	900	102.2	103	102.7	101.8	8 P.M.	2 c.c.	105.6	106.8	105	104.8	105.2
600	Grade.	6	F.	900	102	102.8	102.6	102.3	8 P.M.	2 c.c.	105.7	106.3	106.6	106.2	106
549	Grade.	4	F.	800	102	101.1	101.8	101.5	8 P.M.	2 c.c.	106.8	106.7	105.4	106.4	105
550	Grade.	3	F.	700	101	101.2	101	100.8	8 P.M.	2 c-c.	102.8	105.2	104	105.2	105
601	J.	9	F.	850	101	101.6	101.8	102	8 P.M.	2 c.c.	101	101.6	101.6	101.8	101.2
602 (bull, small)	Hol.	1 ½	M.	700	102	101.6	101.6	100.8	8 P.M.	1.5c.c.	101.2	102	102.2	102.3	101
603 (bull, large)	Hol.	3	M.	1,000	102.3	102	101.5	101	8 P.M.	2 c.c.	100.8	101	101.2	101.4	101.6
604 (calf)	Grade.	1	F.	500	102.5	102.3	101.4	101.4	8 P.M.	1 c.c.	101	101.6	100.8	102	102.2

*The animals are arranged on this chart to correspond with the subsequent ones containing the reacting animals only.

TABLE SHOWING THE IMMEDIATE EFFECT OF SECOND TREATMENT.

ANIMAL NUMBER.	Treatment.	BEFORE TREATMENT, MAY 20, 6 P. M.			DAY OF TREATMENT, MAY 21, 6 P. M.			AFTER TREATMENT, MAY 22, 6 P. M.		
		Pulse.	Resp.	Temp.	Pulse.	Resp.	Temp.	Pulse.	Resp.	Temp.
591	Oxygen.	48	24	101.4	48	24	101	52	20	101.2
556	Oxygen.	60	28	101.5	64	36	102.8	56	24	101.4
582	Oxygen.	56	24	102	60	24	102	60	20	101.4
533	Oxygen.	56	24	101.6	60	36	101	60	24	101.2
583	Oxygen.	40	20	101.5	60	24	101.2	52	20	100.8
543	Oxygen.	64	28	102	64	36	103	64	28	102
589	Oxygen.	64	20	102	60	32	102	64	24	102
567	Air	48	16	101	72	36	102	56	28	101.4
514	Air.	56	16	102	60	28	101.5	60	24	102
540	Air	60	24	102	68	40	101	60	28	101.5
572	Air.	60	18	101	64	32	101	56	20	101.6
563	Air	68	24	102.2	48	40	103	60	32	101.6
510	Air.	72	24	101.6	72	36	101.6	68	28	100
541	Air	48	16	101.6	56	20	101	56	24	101
562	Air.	48	20	101.6	48	28	102.4	52	20	101
553	Control	60	20	102.2	60	20	102.5	60	24	101
598	Control	48	20	101.6	52	24	100.8	52	20	100.4
600	Control	56	28	102.1	60	24	101.8	60	24	101.2
549	Control	56	24	101.3	52	24	101	56	20	101

Results of the Tuberculin Test July 28, 1902.

Animal Number.	Treatment.	Hours Before Injecting Tuberculin.				Hours After Injecting Tuberculin.						Remarks.
		8.	6.	4.	2.	8.	10.	12.	14.	16.	18.	
591	Oxygen	101.6	102.2	102.6	102	105.4	104.6	105.2	103	102	102	Reacted.
556	Oxygen	101.5	101.6	102	102.4	101.6	101.6	105.4	105	104	102.8	Reacted.
582	Oxygen	102.4	102.6	102.4	102.6	102	102.5	105	106	105.6	104.8	Reacted.
533	Oxygen	100.8	101.8	102	101.8	100.8	101	104	103.6	102.3	102.5	Reacted.
583	Oxygen	101.4	101.2	102	102	100.8	101.8	103.2	101	101.3	101	No reaction.
543	Oxygen	101.3	102 5	102.4	102.4	101.8	102.2	105	104.4	104.4	105.4	Reacted.
589	Oxygen	102.4	102.5	103.6	103.6	102	102	105	104.5	104	104.3	Reacted.
567	Air	101.4	101.4	101.6	102	100.5	100.6	102.8	102.2	102.2	101.6	Reacted.
514	Air	102.2	102.8	103	103.2	102.4	101.8	105.2	104	104.8	104	No reaction.
540	Air	101.2	102.8	103	102.4	101.4	101.6	103	102	102	101.4	No reaction.
563	Air	102	103.4	103	103.8	102	101.4	104.5	103.5	104	104	No reaction.
510	Air	102.3	102.8	102.8	102.5	106.8	105.8	105.4	104	104	103.5	Reacted.
541	Air	101.2	102.4	102.1	102.6	100.8	101	104	103.4	102.6	103.4	No reaction.
562	Control	102	102.4	102.4	102.3	101	100.4	103.4	102.2	102.5	102.5	No reaction.
553	Control	103.5	104.5	104.4	104.6	101.8	101.6	103.6	103	103	102.8	No reaction.
598	Control	101.8	102.4	102.3	102	101	101.8	104.4	104	104	104	Reacted.
600	Control	101.4	102.4	102.8	102.6	102.6	103	105.4	105	105	104.3	Reacted.
549	Control	101.2	102.6	102.5	103	103.4	103.6	105.8	104	104.8	104.4	Reacted.

Results of Tuberculin Test October 14, 1902.

Animal Number	Treatment.	Hours Before Injecting Tuberculin.				Hours After Injecting Tuberculin.						Remarks.
		8.	6.	4.	2.	8.	10.	12.	14.	16.	18.	
591	Oxygen.	101.6	102.2	102.2	102.5	104	104	104.7	105.4	106.2	104.2	Reacted.
556	Oxygen.	101	101.8	101.2	101.5	102.2	102.2	104.6	105	105.2	104	Reacted.
582	Oxygen.	101.4	101.5	102	100.8	101.5	101.6	101.2	101.6	102.8	103	No reaction.
533	Oxygen.	101	100.8	101.5	100	100.4	100.6	101	100.5	100.5	100	No reaction.
583	Oxygen.	101.2	101.2	101.4	101	101	101.7	101.2	101.8	100.7	101.6	No reaction.
543	Oxygen.	101.6	101.5	101.8	101.4	102.2	103.2	104.6	104	103.6	103	Reacted.
589	Oxygen.	101.5	101.4	101.8	100.2	101.8	101.6	101.6	101.4	101.4	101.5	No reaction.
567	Air.	100.5	101	101.4	101.2	100.4	101	101.2	101	101	101.4	No reaction.
540	Air	101.5	101.2	101.8	101.6	101	101.2	102	101.7	101.2	102.5	No reaction.
563	Air.	100	100	101.6	101.2	100.5	100.8	101.6	101.5	101.4	102	No reaction.
510	Air	101.2	101.5	101.6	101.5	101.2	101.4	101.6	101	100.6	101.4	No reaction.
541	Air.	100.6	101	101.2	101	101.2	101	102	103	103	102.6	No reaction.
562	Control	100.4	101.2	101.4	101	100.8	100.8	101.2	101.4	101	102	No reaction.
553	Control	100.8	101	101.5	100.6	100.4	100.8	101.2	101.8	101.8	102.4	No reaction.
598	Control	100	101.4	101.6	100.4	100.6	100.4	101.5	103.5	101	101	No reaction.
600	Control	101.6	101.4	101.2	100.2	102.4	103.5	104	103.6	104	103.2	Reacted.
549	Control	100.5	100.4	100.8	100.8	102.4	103.8	104.4	104	103.5	104	Reacted.

TABLE SHOWING THE DISTRIBUTION OF TUBERCULOUS LESIONS IN THE NINETEEN ANIMALS.

(X indicates very few—XX a larger number of tuberculous foci—XXX indicates larger lesions.)

ANIMAL.	Treatment.	LYMPHATIC GLANDS.					LUNGS.		Liver.	Omentum.	Pleura.	Remarks.
		Retro pharyngeal.	Bronchial.	Post-mediastinal.	Mesenteric	Portal	Rt.	Left				
591	Oxygen. .	X	. .	XX	XX	. .	X	X	XX	. .	. .	Lesions chronic in nature.
556	Oxygen. .	. . .	X	. . .	. . .	. .	. .	. .	X	. .	. .	Lesions chronic in nature.
582	Oxygen. .	. . .	X	X	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
533	Oxygen. .	. . .	XX	XX	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
583	Oxygen. .	XX	. .	XX	. . .	. .	X	X	. .	. .	. .	Lesions chronic in nature.
543	Oxygen. .	. . .	. .	XXX	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
589	Oxygen. .	XXX	. .	. . .	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
567	Air. . . .	. . .	XX	. . .	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
514	Air (died) .	. . .	. .	. . .	X	. .	. .	. .	X	X	X	Lesions chronic in nature.
540	Air. . . .	. . .	. .	XX	X	. .	X	. .	. .	. .	X	Lesions chronic in nature.
572	Air (died) .	. . .	. .	XX	. . .	. .	X	X	. .	X	XX	Lesions chronic in nature.
563	Air. . . .	. . .	. .	X	. . .	. .	. .	. .	. .	. .	. .	Slight pleurisy, tubercules.
510	Air	XX	. .	X	. . .	. .	. .	. .	X	. .	. .	Lesions chronic in nature.
541	Air. . . .	X	. .	. . .	. . .	. .	X	X	. .	XX	. .	Acute lesions in omentum.
562	Check . .	. . .	X	. . .	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
553	Check . .	. . .	XX	. . .	. . .	. .	. .	. .	. .	. .	. .	Lesions chronic in nature.
598	Check . .	. . .	XX	XX	. . .	. .	X	. .	. .	. .	. .	Lesions chronic in nature.
600	Check . .	. . .	X	XX	. . .	. .	X	X	X	. .	. .	Lesions chronic in nature.
549	Check . .	XX	. .	XX	. . .	. .	. .	. .	. .	. .	. .	Tubercular mass soft, no calcification

this guinea pigs of similar weight (1200 grammes) were inoculated with small pieces of equal size from the walls of tuberculous lesions from nearly all of the animals. The guinea pigs all died of generalized tuberculosis. There was some difference in the time required to kill them but this was no greater than the variation in the course of the disease in two guinea pigs inoculated from the same lesions. A summary of the results are appended in tabulated form.

RESULT OF GUINEA PIG INOCULATIONS WITH TUBERCULOUS LESIONS FROM BOTH REACTING AND NON-REACTING CATTLE.

Animal number.	Tissue inoculated.	Date of inoculation.	Result.
591	Pleura.....	Oct. 18, 1902	Guinea pig died Jan 2, 1903. Generalized tuberculosis.
556	Bronchial gland..	Oct. 18, 1902	Guinea pig died Nov. 29, 1902. Generalized tuberculosis.
582	Med. gland.....	Oct. 18, 1902	Guinea pig died Nov. 2, 1902. Generalized tuberculosis.
333	Bronchial gland..	Oct. 18, 1902	Guinea pig died Dec. 4, 1902. Generalized tuberculosis.
583	....	....	....
543	Med. gland.....	Oct. 18, 1902	Guinea pig died Nov. 2, 1902. Generalized tuberculosis.
589	Bronchial gland..	*Oct. 18, '02	1. Guinea pig died November 20, 1902. Generalized tuberculosis. 1. Guinea pig died November 28, 1902. Generalized tuberculosis.
567	Lymph gland....	Oct. 18, 1902	Guinea pig died Nov. 29, 1902. Generalized tuberculosis.
514	Lymph gland....	Sept. 5, 1902	Guinea pig died Oct. 1, 1902. Generalized tuberculosis.
540	Mes lymph gland	Oct. 18, 1902	1. Guinea pig died December 1, 1902. Generalized tuberculosis.
563	Bronchial gland..	Oct. 18, 1902	Guinea pig died Dec. 6, 1902. Generalized tuberculosis.
510	Ant. med. gland.	Oct. 18, 1902	Guinea pig died Dec. 1, 1902. Generalized tuberculosis.
541	Lung.....	*Oct. 18, '02	1. Guinea pig died November 20, 1902. Generalized tuberculosis. 1. Guinea pig died November 28, 1902. Generalized tuberculosis.
539	Bronchial gland..	Oct. 18, 1902	Guinea pig died Dec. 4, 1902. Generalized tuberculosis.
553	.....	.....	....
598	.....	.....	.....
600	Lung.....	Oct. 18, 1902	Guinea pig died Dec. 4, 1902. Generalized tuberculosis.
549	Dorsal M. gland.	*Oct. 18, '02	1. Guinea pig died December 6, 1902. Generalized tuberculosis. 1. Guinea pig died December 27, 1902. Generalized tuberculosis.

* Two inoculations.

The results obtained point with some favor to the value of the inflation treatments. The fact that three of the control animals did not react at the last test is in harmony with well

formed observations that a certain number of infected cattle that respond to tuberculin will recover under favorable conditions. It is interesting to note further that all of the animals receiving the inflations of air failed to react. This indicates a possible therapeutic value in this treatment. The oxygen animals, which thrived better than the others during the treatment, showed at the end but slightly better results than the controls. It is unfortunate that the animals could not have been kept until time had been given the lesions to have become fully encapsulated or absorbed in case they were recovering; or for the further development of the lesions if the seeming check to the progress of the disease, as indicated by the tuberculin test, was only temporary. It is very desirable that these experiments should be continued until the efficiency of this treatment of reacting cattle is definitely settled. The doubts arising from these results are unavoidable owing to the slow development of tuberculous lesions and the necessity of an early slaughter of the animals in the experiment.

If the mooted points are set aside, we can still gather the conclusion from the experiment that reacting animals may be kept, isolated from others, with profit to the owner. Certainly the slowness in the development of the lesions, warrants the keeping of them for feeding purposes if, when fattened, they can be slaughtered and used for food after being inspected under proper regulations as is the practice in the federal meat inspection. The results obtained in the controls suggest more strongly than has heretofore been emphasized the efficiency of Bang's method as a means of treatment. There is no evidence that cattle are more susceptible to tuberculosis than man and consequently there is reason for expecting that, under like circumstances, there will be quite as good results from the individual resistance to the parasitism. The fact that all of the cattle treated with the air and over 50% of those receiving the oxygen did not react, after the last tuberculin test, suggests that these substances may possess, when absorbed by serous membranes, therapeutic value.

It is hoped that in the near future opportunity will be afforded of putting the treatment both by the inflation with gases and of isolation to a thorough test by allowing the animals to live until the fact is demonstrated relative to the permanent benefit which the results herein reported are but suggestive. As it is possible to determine positively the efficiency of the methods, it seems unwise to speculate or argue for or against them until the results of sufficiently extended experiments are recorded.

A MULE COLT foaled at the Kansas Experiment Station weighed 125 pounds at birth and gained 77 pounds in 11 days. A pure-bred Percheron colt dropped about the same time scaled 122 pounds.

EVANSVILLE, IND., held a very successful horse show the latter part of May. Dr. J. R. Mitchell, Resident State Secretary of the A. V. M. A. for Indiana, is the Secretary of the Horse Show Association, and was largely instrumental in its success, being also an exhibitor in several high-stepping classes.

FOR A STATE RACING COMMISSION.—The Pennsylvania State Veterinary Medical Association, at its meeting March 4, adopted the following resolution: "WHEREAS, Clean and honest trials of speed are of great value as a means of developing the quality of horses, and are most interesting and instructive as exhibits; and WHEREAS, Horse-racing receives its best development in the direction of wholesome sport, and is most advantageous to breeders in countries and States where it is under proper governmental control and supervision, while, on the other hand, it is not conducted in the interest of pure sport nor in the interest of horse-breeders in States where there is not some oversight from a high and impartial tribunal; be it *Resolved*, That we, the Pennsylvania State Veterinary Medical Association, recommend the establishment of a State Racing Commission, to be composed of men interested in the improvement of horses, to be selected by the Governor, and to be empowered to license and supervise race courses and race meetings, to the end that horse-racing may not be merely tolerated without legal status, but shall be placed on a fixed foundation and shall be honestly conducted, free from gambling. In this way horse-breeding and the improvement of horses may have fixed standing and definite support."

VETERINARY OBSTETRICS.

By W. J. Martin, V. S., Kankakee, Ill.

Read in two sections before the Illinois State Veterinary Medical Association, at Chicago, Dec 2, and at Urbana, Feb. 16.

The term veterinary obstetrics in its widest sense includes those obstetric operations met with among all the various species of domestic animals that come more or less under the care of the veterinarian, such as the equine, bovine, canine, feline, porcine and ovine species. In this paper I shall confine myself almost exclusively to the equine and bovine species, these being the ones with which I have had the largest experience. In large cities the practice of veterinary obstetrics is confined almost exclusively to the canine and feline species; in country practice the practice of obstetrics is mainly confined to the bovine and equine species, though with the rapid advance being made in the breeding of valuable pedigreed sheep, swine and goats, it can be but a short time when the services of the veterinary accoucher will be eagerly sought after for those animals also.

To the country practitioner the practice of obstetrics is of vital importance, and there are perhaps few other branches of his profession in which he should be so thoroughly trained in order to prevent making serious errors, in the performance of his difficult duties. It is not my intention in this paper to enter upon an exhaustive thesis on all the various topics that are so intimately connected with the study of veterinary obstetrics, but rather to give a few hints which the writer has found to be useful after long years spent in actual practice.

Instruments.—Every veterinary student after passing through the period of study and probation prescribed of him by his *alma mater*, upon returning home exhibits with pardonable pride to his admiring friends his glittering array of surgical instruments, among which, if the newly fledged veterinarian intends to engage in country practice, will be found a motly array of so-called "obstetrical" instruments. We have all passed

through this phase of our existence. Now a word as to many of these instruments designed for obstetrical purposes. In the first place, many of those instruments, more especially those intended to be used in bovine and equine practice, are as a rule very expensive, clumsily constructed as well as handled, and often utterly worthless for even correcting, let alone removing, a case of dystokia in the mare and cow. My experience has taught me that the less we resort to the use of sharp-pointed hooks and other cutting instruments in cases of dystokia in the mare and cow, especially the former, the larger will be the percentage of recoveries, among the dams, after such operations. Of course, there are some exceptional cases of dystokia in which resort must be had to every available means at our command to effect delivery, and in which the use of sharp hooks and other cutting instruments is not only justifiable but absolutely necessary.

The instruments which I have found to be most useful in the practice of obstetrics among bovine and equine animals are, first, cords or bands, such as the ordinary sash cord and small manila rope about one fourth of an inch in diameter, and six or eight feet in length, provided with a ring or loop at one end. Second, several blunt hooks, varying in size and length from six inches up to 18 inches or longer; these hooks vary in the diameter of their curve, from that of the small finger hook, to that large enough to partly encircle the neck of the foal or calf. I also use a number of semi-sharp and sharp hooks of different curves and angles; some of these are jointed, others are rigid. A repeller, rope carrier, spatula and a set of parturition pulleys, together with several embryotomy knives curved and probe-pointed, and a large metal injection syringe completes the case of parturition instruments. Parturition instruments should be heavily nickel plated and kept scrupulously clean and bright. But, after all, a long strong arm, supplemented by strong pliable cords, are the best of all parturition instruments.

Clothing.—Proper clothing is a matter of prime importance to the veterinary accoucher. That he should be properly pre-

pared before entering upon the discharge of his arduous duties, goes without saying. Under no circumstances should we attempt the removal of a foal or calf, without changing our common wearing apparel. The reasons are twofold: First, by not doing so, we too often ruin a suit of good clothes, the cost of which often far exceeds the amount of the fee we receive for the performance of the task. Secondly, by attempting to work with shirt sleeves tightly rolled up, the circulation of the blood in the arms is impeded, which, together with the uterine contractions, render those members powerless in a short time; again, the length of the arm is often considerably shortened by the tightly rolled-up mass of clothing; again, during the manipulations, the shirt and underclothing become saturated with the excrementitious discharges from the rectum and vulva, and when the operation is completed, it is not a pleasant subject to have to contemplate to have to ride home ten or fifteen miles, often in the night, and most commonly in cold weather, in such a foul and bedraggled condition.

My obstetric clothing consists of a pair of roomy oil-cloth overalls, a heavy flannel shirt without sleeves, with a high collar of the same material to button closely around the throat; over this shirt goes a long sleeveless frock or jacket, made of oil-cloth; this reaches nearly to the knees and effectually protects the waist and breast against water and filth. The shirt and frock are put on by passing over the head; the opening in the garments being just sufficient for this purpose, and afterwards being fastened at the back by a single button. A closely-fitting skull cap completes the dress. To don this obstetric clothing, first remove shirt and undershirt, put on the sleeveless flannel shirt, draw on oil-cloth overalls over the trousers, then put on the oil-cloth jacket and you are ready for business. When dressed in this manner your trousers and drawers are completely protected from wet and filth, and when your work is completed, your shirt and undershirt are dry and comfortable for you to put on. In cold weather always make it a rule to change your clothing in the house if possible.

Medicinal Agents for the Parturition Satchel.—A parturition satchel is not complete without a few of the more important medicinal agents. Of these I prefer the following: An eight-ounce bottle of tr. opii fort., eight ounces of sp. vini rect., eight ounces sp. nith. ether., eight ounces of tr. ferri. perchlor., eight ounces of antiseptic oil, eight ounces of chloroform for inhalation purposes, two to four ounces of some reliable antiseptic, and a four-ounce box of petrolatum ointment for anointing the hands and arms. A half-pound can of alum is also useful in cases where eversion of the uterus occurs; it is also valuable as an astringent in cases of vulvitis, etc.

Inhalations of chloroform are very useful in many cases of dystokia, eversions of the uterus or in cases of rigid os. The alcohol and nitrous ether are useful stimulants to an exhausted animal after a prolonged period of difficult parturition. The tincture of iron is unsurpassed as a hæmostatic and astringent should hæmorrhage occur. The antiseptic oil is an excellent addition to warm water for injection purposes. Oily injections into the uterus aid materially in correcting malpresentations of the fœtus and facilitates its delivery. I am a firm believer in the efficacy of copious injections of tepid oleaginous fluids into the uterus in every case of dystokia.

Examination and Diagnosis of Cases of Dystokia.—The practice of veterinary obstetrics will become less formidable to the practitioner after he has made himself thoroughly familiar with the anatomy and physiology of the organs of generation of the various species of animals upon which he is most commonly called to attend.

When called upon to attend a case of obstetrics, the most important conclusion for the practitioner to arrive at is the position occupied by the fœtus in utero. To properly accomplish this, plenty of time and patience is required. By following this method of procedure, mistakes in diagnosis often fatal to our patient as well as damaging to our own reputation, will be avoided. Never be in a hurry, no matter how much you may be annoyed by the questions or idle comments of bystanders or a solic-

itous owner. Be guarded in all you say and do. In the practice of veterinary obstetrics, the accoucher too often labors under the greatest disadvantages, more especially when called to attend a case of difficult parturition in the mare and cow, and which to overcome often requires the patience of a Job with the strength of a Hercules. His services are rarely or ever sought until the owner and every other "Smart Aleck" in the neighborhood have exhausted every fair and foul means in their power to extract the fœtus from the outraged and suffering dam, and oftentimes in what a frightful condition do we find the poor beast, after hours of the most excruciating pain and torture at the hands of brutal and ignorant busybodies. The animal is often entirely exhausted, lying prone upon its side and unable to rise, the vulva intensely red, swollen and bruised, the rectum often prolapsed, the womb torn and lacerated by sharp hooks, and saturated by the filth of dirty ropes and sometimes chains—I have often been called to attend cases of dystokia in the mare and cow, in which I experienced greater difficulty in removing the large ropes and sharp hooks attached to the fœtus by some "experienced" meddler, than I had in afterwards removing the fœtus. Again, how often do we find our patient lying in some open shed or hovel, with, perhaps, a foot or two of manure underneath and a pool of stagnant manure water close by; the ceiling of the hovel is often too low to permit your standing upright and with perhaps but a couple of feet in length between the animal's tail and the side walls; the roof of the shed in my experience is rarely or never waterproof, while through its delapidated sides the wind whistles mournfully to caress your half naked form. In such surroundings, lighted by the feeble rays of a single smoky and sputtering oil lantern, the veterinary accoucher is called on to perform his duty. It is expected as a matter of course by the owner and his group of friends present (sometimes he is entirely alone), that the practitioner will accomplish in 15 minutes what they and perhaps half the neighborhood have been attempting to do for the past six or eight hours. Ye gods, how often when confronted by such surroundings I have wished I was a millionaire.

Pathological Changes in the Maternal Organs which Cause Dystokia.—Atresia and Adhesive Constrictions of the Vagina.—These conditions may be due to a variety of causes, such as congenital defective development of the vagina or the formation of cicatricial tissue due to lacerations inflicted during previous parturitions or from injuries by the male penis during copulation. Constriction of the vagina may also be due to anatomical deformation of the bones of the pelvis or to adventitious growths in the walls of the vagina.

Rigid Os.—This condition is commonly met with in the mare and cow, though it occurs much more often in the mare than cow. It is met with in both old and young primaparæ as well as in multiparous animals, though I have found it to be most common in the latter. It may owe its origin to one of several causes, such as the occlusion or agglutination of the wall of the cervix by inflammatory action, fibrous degeneration and thickening of the ligaments of the cervix, carcinomatous or fibroid neoplasms involving the cervix uteri or embedded in its parietal walls. In gray mares the cervix uteri is often the seat of extensive melanotic deposits which often seriously interfere with normal parturition. The majority of cases of rigid os in the mare are no doubt due to injury received during some previous parturition or during copulation at time of impregnation.

Spasmodic Contraction of the Vagina and Cervix Uteri.—This condition is rare, though it does occur in the mare during the early stages of parturition.

Treatment.—When fibrous adhesions are found to exist in the vagina and the lumen of the organ is not completely obliterated, they may be readily broken down by the hand or carefully incised with the probe-pointed embryotomy knife. When occlusion of the vagina is complete the incision must be made in the median line so as to reach the cervix uteri. In rigid os, copious injections of tepid oleaginous fluids should be first used, supplemented by the sponge tent saturated with the fluid extract of belladonna. Inhalations of chloroform in sufficient quantity to produce partial narcosis, hypodermatic injections of

morphia or full doses of bromide of potassium may be successfully employed to relax a rigid os. These failing, resort must be had to incisions. These should be of sufficient extent and number to allow of the free passage of the fœtus through the cervix uteri in order to prevent rupture or laceration of the uterine walls. In the majority of cases of vaginal and uterine hysterotomy the hæmorrhage is slight, and easily controlled by tampons steeped in cold weak solutions of alum water or tr. ferri chlor. Diffusible stimulants should always be administered to the patient, after removing a fœtus by this method.

Torsion of the Uterus.—Owing to the marked anatomical difference in the structure of the uterus of the cow from that of the mare, torsion of the uterus is much more common in the former than the latter, though, in my opinion, it is not by any means so rare in the mare as the paucity of the literature on the subject in American veterinary obstetrics would lead us to believe. I have been able to find but three cases of torsion of the uterus on record in this country, one of these by the writer, and the other two by Dr. W. A. Heck, of Iowa, and are recorded in the AMERICAN VETERINARY REVIEW, of Nov., 1900. Since the report of my case, I have met with another one in the mare in which delivery was, after much hard labor on my part, accomplished successfully by inhalations of chloroform and the rolling method described by Fleming in his text book of obstetrics. From the numerous reports of cases of torsion of the uterus in the mare mentioned in European veterinary literature, I am inclined to think that this formidable cause of dystokia in the mare has to a certain extent undoubtedly been overlooked in this country. Further light upon this most important subject would be of the utmost value to American veterinary literature.

Adhesion of Fœtus to Uterus.—Adhesion of the fœtus and fœtal membranes to the uterus are, as a rule, due to inflammatory processes long existing between the contiguous parts, or to an abnormal or diseased development of the ovum at the time of impregnation; or it may be caused by an insufficient amount of amniotic fluid between the amnion and the fœtus. At times

the adhesions are incomplete, that is, it occurs only at isolated spots between the fœtus and uterus, at other times the union is complete between the fœtus, fœtal membranes, and the uterus, and all of these various parts become entirely solidified.

It has been my experience that disease of the placental membranes in the mare, are much more common during years in which epidemic diseases, such as epizoötic catarrhal fever, infectious pneumonia, etc., prevail.

Adhesion of the fœtus to the uterine walls is by no means of common occurrence in the mare or cow, but that such adhesions do occur is abundantly shown by the numerous reports of such cases found in European veterinary literature. I have met with one case during the 20 years in which I have been in practice, and will give a short synopsis of it:—Bay mare, aged 6 years, weight about 1200 pounds, well nourished, and to all appearance in perfect health, had been regularly worked on the farm previous to foaling, had been in labor for some ten or twelve hours previous to my arrival, the head and fore limbs of the fœtus had presented as in normal parturition, but despite the strongest traction that could be exerted by eight strong men aided by means of a long pole used as a lever, the fœtus could not be advanced an inch further. I also was unable to effect delivery by traction, and after removing the head and fore limbs by embryotomy, and then attempting to pass my hand between the fœtus and the uterine walls, I found that complete adhesion had taken place between the fœtus and the uterus. The union commenced at the junction of the dorsal and lumbar vertebræ of the fœtus, and extended backwards as far as the croup and thighs. All attempts to break down the adhesions proving futile, the mare was destroyed, when a post-mortem examination confirmed the diagnosis. A remarkable thing about this case was the enormous traction to which this mare had been subjected to previous to my arrival, without in the least advancing the fœtus. A person would naturally suppose that such traction would not only tear loose the fœtus but the entire uterus as well.

Fœtal Anasarca.—The accumulation of abnormal quantities of fluid or serum in the body of the fœtus may be divided for the sake of classification into two parts: First, as a true anasarca when the fluid is localized in the skin; and second, ascites when the fluid is localized in the abdominal cavity. Anasarca and ascites are by no means common as a pathological condition in the calf and foal, though it is more commonly met with in the former than the latter. It is well, however, for the practitioner to remember that anasarca and ascites do occur, and when such is the case, if a large amount of fluid is present, they are apt to be the cause of dystokia, especially in those cases where the fœtus has been partially delivered previous to the practitioner being called to the case, and when all attempts at traction have failed to advance the fœtus through the maternal passage further than the head and fore limbs to the shoulders. Such cases might be easily mistaken for an anterior presentation, in which the hind limbs of the fœtus are jammed against the brim of the maternal pelvis.

In such cases manual examination will readily reveal the cause of the dystokia, and the remedy, detruncation with version, will be equally efficacious in either case. When the diagnosis of abdominal ascites of the fœtus is clearly established while the fœtus is still wholly in the uterus, the making of long deep incisions extending into the abdominal and thoracic cavities will quickly relieve the situation and permit of easy delivery. I consider such incisions much more practical in overcoming anasarca and ascites of the fœtus than that of attempting to tap the fœtal abdomen with a long trocar as is recommended by some obstetricians.

Hydrocephalus of Fœtus.—Fœtal hydrocephalus is quite common in both the equine and bovine species, and I have seen some truly remarkable specimens among those animals. If the distension of the cranium is but moderate, the head will not present any great difficulty in effecting delivery, providing the maternal organs are well lubricated with lard or oil, together with copious injections of tepid water into the uterus. The

fœtal head should be then secured with a head collar, the limbs properly secured with strong cords or bands, and steady traction should be used, first on one limb, then on the other, and lastly on the head. In this manner, with patience and steady and not too strong traction, many cases of hydrocephalus may be safely delivered without damage to the maternal organs. When the head is extensively enlarged and distorted it then presents an insurmountable obstacle to delivery, and resort must be had to craniotomy. The majority of cases of hydrocephalus which I have met with were found almost invariably to be presenting in an abnormal manner, which, of course, will render the task of delivery much more difficult. I vividly recall a case of hydrocephalus met with in which the fore limbs of the foal were engaged in the genital canal; the head was found turned far back on the flank, the head enormously enlarged, the bones of the cervical vertebræ firmly anchylosed. The diagnosis of a case of hydrocephalus is in some cases comparatively easy, especially if the labor pains have advanced the fœtus well up into the genital tract, though when the fœtus is presenting naturally and the head is greatly enlarged, the passage of the hand and arm is often accomplished with much difficulty and in some extremely aggravated cases it is often utterly impossible to make a manual examination without first resorting to repulsion of the fœtus.

To reduce a hydrocephalous head, if the enlargement is not extensive, incise the skull in the median line with a strong bistoury, then exercise pressure with the hands on the thin and weakened wall and crush inwards. Before attempting to crush the skull it should be first secured by means of a stout cord or head-collar passed over the occiput; on this steady traction can be made sufficient to steady it while the cutting and crushing process are being carried on. If the cranial bones are of sufficient strength to resist the attempts to crush them with the hands, recourse must be had to mechanical means to reduce them. The skin on the head in the median line should be incised its entire length, and turned downwards over both sides of the face to such an extent as to cover any rough or jagged pieces of bone left after using

the bone forceps or chisel used in destroying the skull. The removal of one or both of the fore limbs at the shoulder joint, or better still, the entire limb, with scapula, will materially aid in effecting delivery in a case of hydrocephalus.

Emphysema of the Fœtus.—It is estimated that decomposition of the dead fœtus takes place after from 24 to 36 hours air has gained admission into the uterus, though I am inclined to think that emphysema may occur much sooner than this period; it in a large measure depends upon the amount of interference which has been made to effect delivery; also the state of the weather often has much to do in producing decomposition of the fœtus; very hot or sultry weather aids materially in producing decomposition of the fœtal membranes that may be exposed to the air, and they in turn conveying this decomposition to the fœtus. We find emphysema of the fœtus quite common in those cases where amateurs have made long and ineffectual attempts to effect delivery of the fœtus; it is no uncommon circumstance to find on being called to such cases, the body of the fœtus extensively inflated with the gases of decomposition sufficient to completely fill the uterine cavity to such an extent as to prevent the introduction of the hand between the fœtus and the uterus, and it is not advisable for the practitioner to attempt to make such an exploratory examination in such cases without first using large amounts of warm water containing antiseptics to be first injected into the uterine cavity. If he does not make use of such injections, he is very apt to become infected with septic matters. The hands and arms of the practitioner should be well covered with oil, lard or vaseline, containing some reliable antiseptic. Under no circumstances should a practitioner work in such a hot-bed of infection as a uterus containing an emphysematous fœtus, without washing and anointing his hands and arms every few minutes with antiseptics. Sometimes infection of the hands and arms will occur even after every precaution has been taken to avoid it. I have found this to be only too true from sad experience.

If after making long, deep incisions into the skin and abdom-

inal and thoracic cavities the fœtus cannot be delivered, recourse must be had to embryotomy. This, owing to the advanced state of decomposition of the fœtus, is usually easy. The cords, instruments, etc., used in removing a decomposed fœtus, should be afterwards boiled for several hours in some strong antiseptic solution in order to prevent infecting other parturient animals with septic poisoning.

Overdevelopment of Fœtus.—Overdevelopment of the fœtus is often the cause of serious dystokia. Excess in volume of the fœtus is almost invariably due to prolonged gestation in utero. I have known of many instances in mares in which gestation had been prolonged for as much as two months or more beyond the normal period of gestation, and then birth take place spontaneously in a normal manner, but such cases do not always have such a happy termination. The fœtuses in some cases of overgestation are often of enormous size, weighing upwards of 200 pounds in some of the cases. I am satisfied from my experience that medium-sized mares bred to ponderous draft stallions frequently require assistance in foaling—and some of the most difficult cases of dystokia met with in my practice have been among such animals. It is a well known fact among breeders, that the progeny of bulls, stallions, and rams, with large coarse heads, are often the cause of difficult parturition in the dams, and it is mainly on this account that such animals are deservedly unpopular.

If an overdeveloped fœtus is presenting naturally, that is in the vertebro-sacral position, the head should be first secured by means of a cord or head-collar, the limbs, if presenting, should be also corded as high up as possible; moderate traction should be first employed on one limb, drawing it out as far as possible, then the other one should be treated likewise, and then the traction should be applied to the head. When the presentation is posterior, with the limbs in the genital passage, the cords should be adjusted as high up as possible and steady traction should be applied alternately to each limb. In this manner it is often possible to effect delivery without resorting to embry-

otomy. When delivery cannot be effected by traction on the limbs and there is not sufficient room for the performance of embryotomy, a long-handled chisel inserted into the rectum of the fœtus and brought against the brim of the pelvis, by a sharp blow, easily severs the bone, which will permit the thighs to come together sufficiently to permit of the body passing through the genital passage.

Fœtal Monstrosities.—Fœtal monstrosities are quite common among all species of the vertebrate and invertebrate kingdoms; they are much more often met with among the latter than the former. They are of common occurrence in both human and veterinary obstetrics. Of all domestic animals they are most commonly met with in the cow, with the mare a close second. In both these animals fœtal monsters cause serious and at times fatal dystokia.

The tetralogical classification of fœtal monstrosities in veterinary obstetrics is very complete, those of Gurlt and St. Hillaire being considered the most complete. We have not the space at our command in this paper to mention but a few of the large number of the various species of monstrosities classified by embryologists (8 orders, 26 genera, and 73 species), but will only mention those which from their extremely abnormal development are apt to cause dystokia. These for all practical purposes we may divide into six principal classes, viz.: 1, double-headed monsters with a single body; 2, two heads and two bodies; 3, one head and two bodies; 4, supernumerary limbs of the anterior part of the body; 5, supernumerary limbs of the posterior part of the body; 6, exuberant growths of a parasitic nature, such as moles, fatty tumors, etc., of varying size and occupying different sites on the body of the fœtus.

The etiology of fœtal monstrosities is as yet quite unknown, though from the experimental researches of embryologists and zoölogists on the impregnated ovum of the frog, sea-urchin and other low forms of life, it is almost universally conceded that monstrosities are produced by two principal causes, viz., polyspermia, or the entrance of two or more spermatozoa into the

ovum, constriction of an impregnated ovum, causing uneven segmentation of the yelk during cleavage, will at times produce fœtal monsters. Second, external causes, acting on an impregnated animal, such as mechanical, chemical, and thermal irritation, such as injuries, blows, sudden cooling of the surfaces of the body, etc., are also supposed to be factors in the production of fœtal monsters. How far maternal impression plays a part in the production of these monstrosities, is as yet an undecided question among psychologists.

So far as the laying down of any hard and fast rules for overcoming dystokia due to fœtal monstrosities, it cannot be done. The practitioner will have to be guided by the phenomena which each individual case presents. Embryotomy will, however, have to be resorted to in nearly all the species of monsters mentioned above, and the performance of this operation in some of those cases, especially where the monster has reached its full period of gestation, will call for the most patient and laborious efforts on the part of the practitioner.

Malpresentation of Fœtus.—When parturition takes place in a normal manner in the cow and mare, the fœtus presents in the vertebro-sacral or natural position—head and fore limbs presenting simultaneously. Any deviation of the fœtus from this natural position gives rise to dystokia and requires the assistance of the obstetrician.

For all practical purposes we may divide the various malpresentations of the fœtus into three grand divisions, viz.: Anterior, posterior, and transverse. Some authors make use of but two, the longitudinal and transverse; others again make use of four, viz., anterior, posterior, transverse and vertical, but I think this is entirely superfluous. In every case of dystokia the fœtus will most assuredly be found to occupy one of the above-mentioned positions in a more or less modified form, such as the vertebro-pubic, right and left iliac, lumbo-sacral, and right and left lumbo-pubic, etc. Of these we will first consider the abnormalities met with in the anterior presentation.

Head Deviation.—Fore limbs presenting with lateral devia-

tion of the head either to the right or left, or turned upwards and backward, or downward between the fore limbs. In lateral deviation of the head to the right or left, it may be found resting against the shoulder, or it may be deflected as far backward as the middle of the thorax or even reach to the flank. (This extreme deviation applies only to the foal, the shorter neck of the calf not permitting of so great elongation.) When the head is deflected downward between the fore limbs, it may be situated deep within the uterus, with the occipital crest tightly pressed against the brim of the maternal pelvis. Again, the head may be presenting normally and one or both fore limbs be turned backwards along the body of the fœtus. At other times we find the fœtus presenting normally in the vertebro-sacral position; but one or both of the hind limbs will be engaged in the genital passage.

We will now take up for consideration the best means to be employed in overcoming the various forms of malpresentations met with in the anterior position. Lateral deviation of the head to the right or left. Diagnosis.—Endeavor to find out on which side of the body the head is resting. In the mare this is often very difficult, especially if labor has been going on for some time, the waters having escaped, the fore limbs and anterior part of the fœtal body tightly driven into the passage by the strong expulsive labor pains, and the interference of amateurs. Fleming mentions what he considers a valuable aid in determining upon which side of the fœtus the head may be resting, the fact that if the head is resting or turned to, say, the right side, the limb of that side will be somewhat shorter than its fellow; this is in a measure true, in the early stage of labor, but after attempts at delivery have been going on for some time, it is without value. The only way to arrive at a correct conclusion is by manual exploration; this should be performed carefully, and in the gentlest manner possible.

If upon examination the head should be found to be turned upward and backward and resting on the back of the fœtus, and it can be reached by the hand, try and pass a cord around

it before attempting to correct its position, because in this position the head is much easier reached than when it is turned to the side. I well remember a case in my early practice where I had attempted to bring the head of a foal in this position into a normal position with the unaided hand with the unfortunate result of having it slip away beyond my reach down the side of the body, from which I again secured it only after long and exhausting efforts. Never lose an opportunity to secure the head by a stout cord.

If the head is found resting far back on the side of the thorax or flank, so as to be entireiy beyond reach of the hand, take a porte cord with a small loop woven on end, in the hand ; if the head is on the right side use the right hand and *vice versa ;* push the end of the cord well downwards between the body of the fœtus and its neck, then pass the hand underneath the neck and draw loop through beneath neck, pass end of cord through loop, and you have secured the neck firmly.

Sometimes it is utterly impossible to pass the fingers between the neck of the fœtus and its body, so tightly are they pressed together. The only resort in a case of this kind is to use a short, blunt hook, of sufficient diameter to partly encircle the neck. The point of this hook can be forced between the neck and body of the fœtus and traction can be applied by means of a rope passed through an eye in end of hook. After having secured the neck by cord or hook, and the traction has brought the head sufficiently near so that the occiput can be reached by the hand, loose the cord around the neck and move it up as close as possible to the poll, insert short blunt eye-hook or hooks into the orbital cavity and apply very moderate traction on them and at the same time traction should be used on the cord around the neck. Great care should be used in applying traction to the hooks in the orbital cavity, because the bones of the orbit are very easily torn through and we lose not only an excellent point of vantage for turning the head into a normal position, but with the bones broken, laceration of the maternal organs or hands is apt to occur.

In these head deviations, we quite frequently find both the fore limbs advanced into the genital passage to such an extent that the knees present outside the vulva. In such cases it is impossible to get sufficient room to make even a superficial examination, let alone to correct the deviation of the head. The first thing I do in such cases is to resort to embryotomy. No time should be lost in useless efforts before resorting to this operation. Draw the limb out as far as possible and take it off at the shoulder joint at least, and if the entire scapula can by brought away, so much the better. Never amputate limbs at the knees and then attempt to push the stumps back into the uterus. It is extremely bad practice and entirely uncalled for. The stumps are very apt to cause rupture of the uterus when being pushed back, or when traction is used in extracting the fœtus. They also bruise the operator's hands and are continually in his way in the uterus. Take them off always at least at the elbow or shoulder joint. It will require but a slight amount more of work on the operator's part to do this, and you will find that you will be more than amply repaid for the extra labor by the facility with which you can perform the delivery.

In downward deviation of the head between the fore limbs, with these presenting in the passage, the methods employed in lateral deviation of the head can be employed, except that retropulsion should be used to force the body of the fœtus as far back into the uterus as possible, which will be to a large extent materially assisted by raising the hind parts of the mother. When retropulsion has been effected the hand is passed downward along the face of the fœtus, until it reaches the nose of the young animal. At times the head can be easily brought up, the nose resting in the palm of the hand. Again this can only be accomplished after strong retropulsion or even chloroformization has taken place. Some authors lay much stress on the benefit to be derived in head deviation in cording or securing the fœtal jaws with hooks; contrary to this opinion I have found the upper or lower jaws of the fœtus of but very little use as a point of vantage in securing and of applying traction to

bring the head up into the genital passage. If we insert a hook, either blunt or sharp, between the rami of the jaws, these are easily torn through, and if we attempt to pass a looped cord over the jaw it is almost impossible to retain it in this position. If it should hold, the bones are easily crushed and the sharp points cut and lacerate the hands. My method is to pass a looped cord or head-collar into the mouth of the fœtus and extend the loop over the occiput, then have an assistant exert gentle traction on the head while your hand placed underneath the nose of the young animal raises it upward above the brim of the pelvis.

Vertebro-Pubic Presentation.—In this presentation the fœtus is found resting on its back with its abdomen in juxtaposition with the maternal sacrum. The head and fore limbs may be presenting in a normal manner, or the head and one limb may be deflected backwards. When the head and fore limbs are presenting normally in this position, delivery is not difficult, providing rotation of the fœtus can be accomplished so as to bring it into the vertebro-sacral or normal position. This is not always an easy matter, especially if the genital passage is narrow or contracted. However, it should be always attempted, as delivery in this the vertebro-pubic position requires the employment of much force in extracting, because the dorsal spines of the fœtus in passing over the pubic bones of the mother offer considerable resistance and may cause rupture of the os uteri or even of the bladder if that viscus be distended with urine.

Rotation is best effected by first securing the head by cord or head-collar, then tying both fore limbs firmly together with a strong cord, through which can be passed a strong stick to act as a lever in twisting or turning the body over into a natural position.

Head and Fore Limbs Presenting, with One or Both Hind Limbs Engaged in the Passage.—This presentation was formerly considered a very serious and even formidable cause of dystokia, and to the inexperienced obstetrician it does indeed appear to be such. There is, perhaps, no abnormal presentation

of a fœtus, especially in the mare, that calls for more cool and careful deliberation on the part of the practitioner than this one. If the fœtus is far advanced, so that the head and fore limbs are hanging outside of the vulva, no time should be lost in useless attempts to push back the misplaced hind limbs or the body of the fœtus. Embryotomy or detruncation of the fœtus should be resorted to at once. Secure the hind limbs by cords around the pasterns. Then exert traction on the head and fore limbs, draw body as far out as possible, divide the body as near the lumbar region as possible, taking care that the ends of all bones are amply covered by loose flaps of skin, then remove contents of the thoracic and abdominal cavities, sever the remaining skin and ribs and draw away the divided portion of the body. When this has been done, again make a careful examination with the hands around the remaining portion of the body to make sure that there are no sharp spiculæ of bone remaining exposed to wound maternal organs. Now lay hold of the cords on the hind limbs and be sure that they are firmly secured to the limbs, then with the repeller apply steady backward force against the dismembered trunk and at the same time exert gentle forward traction on the hind limbs. These should be rotated at the same time sufficient to cause the point of the os calcis to appear uppermost.

Sometimes in those cases we find the fœtus but slightly advanced in the genital passages with all four limbs easily aceessible to the hand, with the head slightly turned to one side. Often in such presentations it is possible by cording the hind limbs, and pushing the fore limbs to one side, to effect delivery by the posterior presentation. When the position of the fœtus will permit of such an eversion it should be always attempted.

At times we find all four limbs presenting with the head deflected backwards beyond reach; this presentation might be really considered by some to be a transverse one, but with the body of the fœtus in the longitudinal line it cannot be so considered. If the fore limbs are so far in advance of the hind ones as to prevent the forcing of them back into the uterus and

delivering by the posterior position, apply cords to both the fore and hind limbs, then apply traction on one of the fore limbs, draw out as far as possible and amputate at the shoulder joint. When both of the fore limbs are removed in this manner, the fore part of the body can be easily pushed back deep in the uterus, and delivery be affected by traction on the hind limbs by the posterior position.

PROSECUTION FOR DOCKING.—Alexander L. Kean, a wealthy bachelor and brother of United States Senator John Kean, whose home is at Livingston, N. J., has been served with a summons to appear next Wednesday afternoon before Justice of the Peace James H. Vreeland, in East Orange, to answer to the charge that on May 8 last he did "cruelly torture a sorrel horse by cutting off the animal's tail." The complainant is Colonel E. G. Edwards, secretary of the New Jersey Society for the Prevention of Cruelty to Animals. This proceeding is of a quasi-criminal nature, and in line with the crusade begun by the society several years ago against the practice of "docking" the tails of horses. George Thompson, coachman for Mr. Kean, and Dr. James C. Corlies, a prominent Newark veterinary surgeon, have also been summoned to appear at the same time in the same case. When Colonel Edwards was told of the case the name of Dr. James C. Corlies was mentioned as having performed the docking operation, but investigation showed this was not so. It will be charged that Mr. Kean, assisted by his coachman, Thompson, cut off the tail of the horse. It is said that the operation was performed in order that the horse would be in the same short tail stylish class as the others in the Kean stable of blood horses. Thompson will be accused of assisting Mr. Kean in having "needlessly mutilated" the animal. Every one concerned in the case declined to discuss it in detail yesterday. It was said, however, that Mr. Kean performed the operation while the coachman held the animal's head and that later Dr. Corlies attended to the horse's wounds. It is also said that there will be four witnesses to the operation in court when the case is called. The proceedings are under a law which was passed by the New Jersey Legislature in 1880, making such an operation punishable by imprisonment for three months in the County Jail or a fine of from $10 to $100, at the discretion of the court.—(*New York Herald, June 7.*)

DIAGNOSTIC PUZZLES.

By Wm. H. Gribble, D. V. S., Washington C. H., Ohio.

Presented to the Annual Meeting of the Ohio State Veterinary Medical Association, January, 1903.

Mr. President and Gentlemen:

I desire to present to you four cases occurring in my practice since the last session, no two of which come under the same class of troubles, but all are, nevertheless, puzzles to me. I thought, perhaps, that such cases or symptoms might be quite common to some, and we could obtain information to assist us, present and future. Don't be afraid to debate these cases, and criticise my ignorance, if necessary, for not diagnosing them; I shall not feel offended, for I well know there are others to whom the internal apparatus of the animal is not nearly as open a book as they would have their patrons believe.

Case I.—Grey gelding, ten years old, used in a four-horse team hauling logs. For years he had suffered with attacks of colicky pains, rarely very severe and with the peculiarity of usually coming on evenings, shortly after being put in the stable. An anodyne colic mixture was kept at the barn, and one dose was generally sufficient to give relief; but occasionally the pains lasted several hours and other treatment would be necessary. This particular day was quite cold (about zero); the team did not work very hard, had been fed their noonday grain in the woods, and arrived home with their load about 5 P. M. without showing the least indication of any sickness.

The driver being cold, put his horses in the barn without giving either grain or water, and went to the fire to warm. Was not gone long, but on returning found our subject down and rolling, showing indications of colicky pains, not of a severe type, but such as he had so often before shown. The usual colic drench was given, with no apparent effect; and in an hour a second dose, with like results; so, at about 7 P. M. I was called. I found my patient lying stretched flat on his side and quiet, with the exception of a few uneasy jerky movements.

Pulse was strong and only forty—so I waited, thinking the animal had about gotten over the attack. In a few minutes he jumped to his feet, urinated and walked fifty feet into the stall beside his mate; and here without any apparent cause he was taken with a most intense attack of coughing, lasting nearly five minutes, and followed by severe spasms of the diaphragm (hiccoughs), and you know that coughing and spasms must have been severe when the animal sweated until it was dripping wet and the water running off his limbs. Hoffman's anodyne was administered and the spasms subsided, but the animal became wild and nearly unmanageable, the pulse weak but slow; but the main peculiar symptom was the constant desire to climb up the side of the stall until the body was almost perpendicular and stand in that position.

The animal became slowly quieter, the sweating stopped, and he laid down, kept quiet a few minutes, then rolled completely over and died without hardly a struggle about 9 P. M. Five minutes before dying, pulse did not exceed 80.

Post-mortem.—By morning the body was frozen hard, and the temperature outdoors was not favorable to a very close examination, but I found no gross bowel lesions whatever, the large and small intestines being quite natural in color; but the stomach, while it contained not one particle of food, was filled to distension with blood and water. What's your diagnosis? I really had none. The patient being dead, your opinion is asked out of curiosity, for did he die of colic? I think not. Or, were his several colics caused by slight stomach hæmorrhages, or was his death due to hæmorrhage brought on by the excessive coughing?

Case II.—Sorrel horse, five years old, driven daily to a rural mail wagon; present owner had not owned him but two months. Sunday (quite cold) he was driven slowly only four miles and hitched in at a livery barn and the bridle not even removed and no food given. In two or three hours, when the owner came to go home, the horse was found panting as if he had been hard driven. I found pulse slightly accelerated but

strong, respirations fifty or sixty and like a bellows, hair dry and no dry sweat, and with the exception of the respirations showed no signs of any trouble; a bad heavey horse, heavy fed with hay, would have shown somewhat like symptoms.

Tried chloroform inhalations, with no effect; offered him feed, and he was greedily ready for it; so the owner concluded to walk him home, and did so after I had given a pint of raw oil. In the evening owner asked by phone what he should feed him, and I ordered a good bran mash with sulphate of soda. Next morning the owner said he was coughing, but otherwise all right; the rapid respirations having passed away. Next morning still coughing, but much less, and next day went to the wagon again, and now, after three weeks, has had no return of the difficulty.

Where and what was the trouble? The animal has not a single symptom of heaves; was given less exercise than common, as his week-day route is twenty-two miles; and he had been given nothing to eat when hitched in the livery barn; and up to to-day shows no symptoms of the prevailing influenza.

Do horses have an acute attack of asthma, or is there such a thing as an attack of acute emphysema?

Case III.—Bay mare, six years old, extra fine driver, in good flesh and apparently in the best of health; I was given the following history by the owner: This mare had carried her tail slightly to the left, and a graduate veterinarian had offered to and did perform caudal myotomy; about two weeks previous to my being asked to take charge of the case, mare had been placed in a narrow stall and the operator had made an incision about eight inches from the base of tail on the right side; had inserted his knife into the incision and moved it about. The owner was holding the tail and says he felt a sudden drop, and made the remark, "My God, Doc., you've unjointed her tail, haven't you?" An intense hæmorrhage followed, which had to be controlled by compress and bandage and allowed to remain on all night. From then on the animal had practically no use of the tail, it hanging behind her like a string. The tail swelled

above the incision, and broke open about two inches below the anus and a foul smelling but slight discharge set in. On examination I found no trouble whatever at the place of incision; the skin wound was nearly healed; but the base of the tail on the under side showed a shiny, doughy swelling about six inches in length and including the upper side of anus; the upper side of tail showed an equally swollen area, with fluctuation, and a small opening on the upper right side about 2½ inches down; was discharging the most fœtid pus I ever smelled (it beat decayed teeth). On taking hold of the tail-hairs to hold the tail while I made a larger opening, I was surprised by lifting off that part of the tail I had hold of; an area extending from where the hair of the body ends and hairs of tail commences down the tail for four inches and the full width of the top, gradually becoming narrower at the sides, and ending in two points on the under side. On top, hair, hide, and muscles came off down to and baring two coccygeal vertebræ, the superior part being as straight up and down as if chopped with an axe. Fully a pint of gangrenous material fell to the ground. You could look between the upper bared vertebræ and the one above not bared, as the superior ligament was gone; and from appearances one would judge that nothing could prevent the unjointing and falling off of the entire tail. I said entire tail, from a physical and not an anatomical standpoint, as the separation on the under side was exactly where the crupper holds and on the upper side where the two kinds of hairs meet. A valuable roadster mare with no tail is not a good asset, and, while prognosis was not favorable, treatment was ordered. All gangrenous material was carefully removed, the wound washed for hours with a strong solution of zenoleum, then thoroughly painted with a mixture of pyoktanin and glycerine and sprinkled with tannoform, covered with cotton and bandaged. This treatment was continued throughout, with the exception of not so long a washing with zenoleum. The mare had a very heavy tail, the weight of which would assist in promoting its own separation, so I devised the following to support it: first, the hair was cut off

to the dock, and then a steel frame was made and attached as per photograph. It extended from the withers, where it was in two branches, one resting against each shoulder and connected by strap across the breast, back along the spine, following the contour of the body to the base of the tail, where it turned up like the tail of a sparrow. At the hips another piece was riveted on, and turned down on each side, so as to prevent the main part from working sideways. This frame was held in position by a belly-band and a surcingle just forward of the hips, and rubber cords reaching from the hip frame, passing under the body to a front martingale. The tail wound was dressed, packed, and bandaged, and the tail fastened into a canvass support, then lifted up and securely attached to the tail part of the frame. This not only lifted the weight of the tail off the wound, but put the edges of the larger wound much closer together, and gave the best of drainage, as well as allowing the animal to lie down or be given exercise. From the very first I was agreeably surprised at the wound, for in two or three days it took on a healthy appearance, very little pus formed (and after a few days practically none); anchylosis of the vertebræ set in, and in two months the mare was in harness, cured. Cured, I said, and I mean by that, that she has a tail, ornamental, but not very useful, as she is unable to move it, and at least four coccygeal vertebræ are anchylosed; but the holding of the tail to the frame for so long a time made it heal slightly away from the body, so that defecation is not interfered with.

This case was not a puzzle to diagnose; but why did the sloughing occur, not where initial incision was made, but fully four inches above it; or was the trouble all caused by the bandage, which had been left on all night, but which the attendants claim was not on tight?

Case IV.—A suckling colt, about four months old, was seen in the pasture coughing badly, had a dirty and profuse nasal discharge, not suckling much (from looks of the dam), but drank water. Owner supposing distemper, gave it but little

thought, only noticing that in two or three days the discharge had stopped, and colt was playing about the field as usual. In a short time the same symptoms were again gone through with, and with a like result. Again, in a few weeks, the colt was found in the same condition and my opinion was asked for. I had none without seeing the patient; and none even then, for on going to see it the next day I found a fine looking draft colt apparently in good condition and playing around the yard as if it had never suffered a particle of inconvenience in its life. Four days later I was again called and was informed that the colt had been as he is for two days. The nasal discharge I noticed was mostly food. The colt was hollow-looking and hungry, but at the least attempt to swallow, after chewing its food, severe coughing would occur, with the expulsion of the major part of the food through the nostrils (one as much as the other), and a smaller quantity be ejected through the mouth. Pinching of the throat increased the coughing, but after the food was expelled only a frothy mucus followed, giving the appearance a little way off of a very bad case of strangles, only the discharge was white instead of yellowish. As a daily ration of dry oats was fed, I thought perhaps slight choking was the trouble, so passed a probang; which was apparently beneficial, as next morning the colt was O. K. again.

I prescribed daily small doses of raw oil to remove oat hulls, if, perchance, any beards were stuck in the pharynx or œsophagus, and awaited results. For two or three weeks I thought my treatment successful, only one day to find without any warning that my patient was as bad as ever; no treatment was given, and in two or three days he was all right again. So this round of symptoms continued, and the colt still grew. The attacks lasted three or four days, during which the colt ate, drank, and suckled but little, and got quite hollow looking; only to run and play as much as ever, as soon as he was over it. The intervals between attacks were about two weeks or less, gradually becoming shorter, until at the present time the colt is that way all the time; some days much worse than others. It is noticed to have

passages from the bowels, so must get some food, but is losing flesh and slowly but surely starving to death. The colt has been seen to suck (apparently empty the dam's udder), take its head away and without moving a step, cough and eject about all it had suckled. This nullifies the partial choke theory as well as the lacking of offensive breath.

Have I a case of *diverticula and stenosis?* If so, whence the cough and where is the enlargement and stricture?

This case I am much interested in; it is a good colt, still alive and with proper diagnosis and treatment its life might be saved; but in the literature in my possession, with the exception of Malkmus' "Clinical Diagnosis," I can find no case described, having the same train of symptoms, nor any disease having a likeness to it. Kindly open your memory boxes, and if they contain a like patient, give me the benefit of your care of it.

FORD COUNTY, KAN., bought 200 cans of prairie dog poison from the experiment station at Manhattan and distributed them among township officers, with instructions to go ahead with the work. Representative C. Beeson related recently that as a result every dog on his 7,000-acre tract had been killed.

"INFECTIVENESS OF MILK OF COWS WHICH HAVE REACTED TO THE TUBERCULIN TEST," by John R. Mohler, A. M. V. M. D., chief of Pathological Division, Bureau of Animal Industry, constituting Bulletin No. 44, is received, and is a very full and accurate *resumé* of the subject, being splendidly illustrated in colors.

THE bill appropriating $100,000 toward the erection of a suitable building for the Veterinary Department of the University of Pennsylvania is being very earnestly supported by the profession of the Keystone State, and we trust that it will be passed, as will also another bill asking for $30,000 for extension of the work of the State Live Stock Sanitary Board.

A CABLEGRAM from Durban, Natal, South Africa, dated May 21, says: "The British steamers *Abbey Holme* and *Anglo-Chilian* have arrived here from Buenos Ayres with a foot-and-mouth disease prevailing among the cattle on board of them. The authorities insist that all the live stock on these vessels be slaughtered before the steamers are allowed to enter the harbor."

RABIES OR HYDROPHOBIA.

By Dr. H. F. Palmer, Detroit, Mich.

Read before the Annual Meeting of the Michigan State Veterinary Medical Association, February, 1903.

While this dread disease is in our midst and carrying away so many of our canines and a few of the *genus homo*, it seems well for us to pause a moment and consider what rabies is and what possibilities there are in coping with the disease.

Rabies is a disease known to have existed even before the Christian Era, but it remained for the last two decades to show its infectious nature. The clinical appearance of a case of rabies is quite familiar to you all. The dropped jaw, the extended tongue, the bone-in-the-throat appearance and the extra kind disposition of the quiet or dumb form, and the mad, furious, snapping, snarling, frothy-mouthed cur with the furious form, are pictures probably seen by you oftener than by your speaker. But it is not with these clinical symptoms that I desire to deal here to-day, but rather as to rabies from a sanitary standpoint.

Aristotle was probably the first writer upon this subject, he having mentioned it four years before Christ. From that time down to the present date, nearly every country or province has had a turn with it some time or other. From the days of Aristotle it was known that all animals bitten by dogs affected by it became rabid in the end. Now it is known to be a true infectious disease and that it does not occur spontaneously. Usually confined to the canine race, but can be transmitted to all warm-blooded animals. The specific cause of the disease is a micro-örganism which up to very recent date has not been isolated. Supposed to be a micrococcus, but of late has been described as a bacillus. It remained for Prof. Sormagni, of Paris, to recently announce that he had isolated a bacillus which was the specific cause of rabies. We would give more credit to this Italian professor were in not for the fact that another Italian, Prof. Dr. Braschettini, also claimed to have isolated the organism, but it was later disproved by the Pasteur Institute.

The mode of transmission is direct. According to Friedberger and Fröhner, no authentic fact exists of contamination by any intermediary agent. Infection is nearly always produced by bites, and statistics show that nine out of ten cases of rabies in man come from the bites of dogs. This being the case, and the dog being the natural source of infection, it behooves us to look well to the dog. Many plans have been proposed for his proper control so he will not be a means of enhancing this dread disease. The tax law and the muzzle law have certainly been of service in controlling rabies. 'Tis not the faithful house dog, but the worthless, homeless cur that seems to be the greatest source of danger. In certain sections, statistics will show that there has been a decrease in the number of cases of rabies with the introduction of a law taxing dogs or requiring dogs at large to be muzzled. Place a tax on all dogs and see to it that unlicensed dogs are properly taken care of, and you take one great step to successfully cope with one of the greatest dangers in rabies.

Not every person bitten by a rabid dog develops rabies. So many mistakes have been made in diagnosis that it has led many to believe that a genuine case of rabies rarely existed. The claim is often made that the train of symptoms often following the bite of a dog acting in any way peculiar is not rabies, but a peculiar condition of nervous excitement which in many cases proves fatal. There is no authentic instance on record of spontaneous recovery from a genuine case of rabies in man, although Decroix reports nine cases of spontaneous recovery in dogs. This fact is taken to prove that many of the so-called cases of rabies are not rabies at all.

This, then, being such a fatal disease, it remained for Pasteur to demonstrate that it could be in a great measure prevented by a method of inoculation, a homœopathic treatment, if you please. Like cures like. His method, in brief, is described as follows: The dried-up substance of the spine of a rabbit is used. In a rabbit which has died from rabies transmitted by inoculation of very virulent matter, the spinal cord is removed, cut into

shreds of about 6 c. m. long. These shreds are then hung in bottles containing a layer of caustic potash, the mouth of the bottle being plugged with wadding. This is then subjected to a temperature of 20° C. In a few days they are dried, and can be easily pulverized. Their virulence is said to be completely destroyed within fourteen days. Thus from the first to this fourteenth day we get all grades of attenuation. According to the great principle of immunity we must produce the same disease or an allied disease in a very mild form in order to produce immunity from the acute form of the disease. This is the plan followed: 2 or 3 c. m. of the dried rabid spinal cord is crushed in sterilized bouillon, and then ½ to ¾ c.c. of this material is injected under the skin of the abdomen. At first a very weak virus is used, and each day this is followed by a stronger virus, until they are able to take a very virulent virus. At first thirteen injections were given, but the number has now been reduced. As to the efficacy of this method Pasteur has shown that of 1335 human beings who had been treated, only one-half per cent. died. This is in the face of the fact that of the untreated from 16 to 80 per cent. die, his method of treatment thus showing a decided benefit over the non-treated or those following the usual clinical course.

THE ILLINOIS WAY.—Dr. F. R. Whipple, Kewanee, Ill., sends us the following item, clipped from a local paper: "Aug. Buester has a cow that has five teats, all of which can be milked; while Edward Hunt has a very young cow with eight teats, all being nearly full size. These are the kind of cows for the dairymen to have, where they only have to feed one and draw milk from the same as two."

"THE NEW YORK MEDICAL JOURNAL" and the *Philadelphia Medical Journal* have consolidated, the former retaining its identity as to title, while the good features of each of these excellent publications will be maintained. Dr. Frank P. Foster will be the Editor-in-chief, with Dr. Kenneth W. Millican as associate. The A. R. Elliott Publishing Co., 66 West Broadway, New York, will publish the journal, with offices in Philadelphia and Chicago.

A DISEASE OF CATTLE AS SEEN IN SOUTH-CENTRAL NEBRASKA DURING 1899 AND 1900.

By Dr. A. Bostrom, Minden, Nebraska.

Read before the Annual Meeting of the Iowa-Nebraska State Veterinary Medical Association, at Omaha, Neb.

History.—This disease appears very suddenly. In a herd of 100 head, 10 to 15 are generally affected at once, where on the day before nothing wrong could be noticed. In a small herd of 2 to 10, half of them may be affected, or in a town where one or two are kept, the one or both may take the disease. So we see that it is a disease of the cattle on the range as well as of the family cow in a town.

Symptoms.—In the first stage we may notice stiffness or tender feet, in one case, and in another, symptoms of lesions of the mouth and sore eyes, without any stiffness. The variation of symptoms in this disease can best be seen in a large herd where a great number of cattle are affected at the same time. I will describe the symptoms in a typical case, about five days after first taken sick. The animal is generally lying down. An abundance of saliva running from the mouth. A thick slimy grayish discharge from both nostrils, some of which is dried and adhering to and around the opening of the nostrils. A purulent discharge from the eyes, eyelids closed. The skin of the muzzle red, like burnt, with a sharply defined line, below which it is raised and gradually peeling off. The gums are swollen and the epithelium around the gums and lips are loosened, leaving a denuded very painful mucous surface, and in quite a number of cases this condition of the gums leads to looseness of the teeth. The feet are generally all affected, showing heat, pain and swelling. The skin of the mammæ and teats is often affected with an exanthematous eruption of small vesicles, which in a short time form dry crusts, and the thin skin along the median line between the hams as far as the root of the tail is similarly affected. Temperature about 105°. Pulse about 80. Respiration about 30. No appetite on the fifth, sixth and seventh days; the animal

during these days seems to be thirsty, plunges its head into a bucket of water, but is unable to swallow, and it seems to increase the pain when the mouth is opened.

Most cases are of a milder form than as described, and in rare cases they are more severe.

I have seen no abortion in this affection. Calves sucking cows do not seem to take the disease, even when the mother is affected. I have seen cattle of all ages above six months old take the disease. Have seen no other animal affected with this trouble.

Course.—The duration of the disease is generally about two to three weeks.

Prognosis.—This disease is not fatal; about 98% recover where ordinary care is given the animal and without medical treatment. I believe that this is a contagious disease.

THE COLORADO VETERINARY BILL, published in the June REVIEW, has become a law, and the following veterinarians have been appointed as the Examining Board under the new law: Drs. McCapes, Lamb, and Culver.

THE HORSE AND THE MACHINE.—There are said to be over 600 horseless go-carts in Minneapolis, perhaps six times more than a year ago. But it does not follow that they displace 600 or more horses. That is, there would not be 600 or 1200 more good road horses in the city if there were no horseless go-carts. The latter are a diversion and luxury, in large part, to men of means and fashion who would not own or drive horses, because there would be no novelty or distinction in it, and the last gives the go-cart its charm, even if it does smell like a petroleum refinery. And the situation in this city probably is the average one in other cities. It was once feared that the bicycle would largely displace horses, as electric cars were formerly sure to do, in the popular estimation, but the good horse has survived all of his would-be annihilators, and is yet in active demand at good prices. The colt of the good sire and dam, if both were of uniform type, may be taken good care of now with almost positive assurance that it will find ready sale at a profitable price when it is a mature horse.—(*Farm, Stock and Home, Minneapolis, Minn., June 15.*)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

AZOTURIA WITH ALBUMINURIA.*

By DR. F. F. SHEETS, Van Wert, Ohio.

More than nine years since a 'phone message called me to a village six miles from my location, where I found a mare, sick for an hour or more. She was stabled in the rear of a residence lot, her water supply being furnished from the opposite side of the same lot, not more than sixty feet distant, and to this she was being led when she faltered, staggered and fell, regained her feet and again fell, showing total disability of the hind limbs. Very soon spasms occurred, severe ones, her head, neck and fore extremities responding. The mare was perhaps eleven years old, 1150 lbs. or heavier, a family pet, being fed a ration of fodder, oats and corn. I do not doubt she was being often fed and over fed by her children friends. I found slight dysuria had been present, but owner was unable to give any symptomatic information. The mare had had no exercise for some time; in fact, offered the typical history which tempted me to suppose I had an ordinary case of azoturia with which to deal.

Upon a very incomplete investigation I gave a narcotic and passed the catheter, the latter quickly affording some relief. The bladder contents passed with difficulty through the small orifice of the catheter; it was almost colorless, as it appeared in the lantern's light, and I noticed as it collected upon the ground it appeared to coagulate as if I had broken two or three dozen eggs and allowed their albuminous portions to have been thrown there.

I did not anticipate making note of this case; the data is not so accurate as I would like to have it. However, I remember I flushed the bladder with a warm solution, and that seemed to soothe the patient, for her fretfulness ceased and she was comparatively quiet until the following morning. In the meantime she had been moved by means of a low sled to a large well-protected shed, where I had the owner continue treatment through the night.

* Read before the Ohio State Veterinary Medical Association, January, 1903.

When first I visited the case, as I now remember, the pulse ran about 70 or 72, the temperature 103° ; circulation seemed uniform, but motor control was absent in a marked degree. I left the case feeling very much bewildered, first having given a purgative, as what little fæces had passed suggested such a need. Returning in the morning, I found the mare beginning to be restless from a distended bladder. I relieved her, being prepared to take a sample. I was surprised to find the urine dark, very typical of urine first drawn in the usual case of azoturia, even with its characteristic odor ; later I found it contained albumin, coagulated fibrous threads precipitated. Earlier on the same morning the mare had eaten a small feed of boiled oats, and had taken some water ; her pulse had subsided to an extent, and the temperature had not changed.

As soon as the mare's position was changed, she exhibited an almost unnatural appetite, and in this ravenousness she continued. Her hind extremities were useless as yet. The case was placed on potassium iodide treatment for the next two days, on the last of which she was raised and stood uneasily for a few moments.

Recovery most rapidly followed this period, more gratifying than one dare expect of the ordinary case of azoturia, and no unpleasant results followed, leaving me still speculating as to how it all occurred.

A MYSTERY.*

By J. HARRISON, V. S., Maple Rapids, Mich.

I head this paper with the title "A Mystery," not because it was a case that I believe I have not diagnosed correctly, but from the fact that I have been unsuccessful in its treatment.

The patient was a seven-year-old gelding, suffering from dropsy of the sheath and abdomen. When I first saw it I supposed it to be merely an enlargement of the sheath, caused by sebaceous matter and filth forming within the sheath, and proceeded to treat it accordingly by cleaning out the offensive matter with warm water and castile soap, and giving diuretic medicine for about two weeks. By that time the animal was considerably better and the swelling reduced a great deal. The animal, however, had an unusually large pouch, which had always been so. My client informed me about six weeks later

*Read before the Annual Meeting of the Michigan State Veterinary Medical Association, February, 1903.

that the swelling had returned, and this time extended in front of the sheath along the abdomen. The animal being quite plethoric, I this time gave a purgative and followed up with diuretics and tonics, treating along this line for about two months, and while it got a little better, the swelling did not go away entirely. About two months after this my client came to me and said that his horse had another attack and that the sheath and abdomen were swelled up larger than before. I told him to bring him down to my barn and I would see what I could do for him. He did so the next day. The sheath was enlarged to about the size of a twelve-quart pail, and in front of the sheath on the abdomen was a separate swelling about as large as a four-quart pail. These I proceeded to explore with a lancet. From the sheath I extracted nearly a fourteen-quart pailful of bloody serum, and perhaps about two quarts from the abdomen. These wounds I kept open or rather opened up afresh every morning for eight days, the amount of serum extracted getting less every morning until the eighth morning, when I got about one-half pint, or less, from the sheath and nothing from the abdomen. In the meantime, I injected a solution of zenoleum and borax water alternately every morning and painted the enlarged parts with tr. iodine liberally, and gave internally potassium iodide in one and one-half dram doses, feeding on good hay and oats and bran mashes.

I was congratulating myself on effecting a permanent cure and had driven the horse a few times. He was doing finely and I had sent word to my client to come after his horse. He, however, did not come for three or four days, and one morning I went to the barn and imagine my dismay on looking my patient over to find that both his sheath and abdomen were swollen worse than I had ever seen them before. My client came that day and I explained the matter to him, but he would not leave the horse any longer, saying he believed it was incurable and that he would not spend any more money on him. This was about a year ago. The horse has run in the pasture field and around the straw ever since. The sheath remains about the same size and also the enlargement in front on the abdomen. I have made partial arrangements to take the horse and operate on him in the spring, but will be pleased if any of the fraternity will give me their opinion in regard to the case, whereby I may profit, and I will cheerfully answer any questions you may have to ask if I can.

COMPLETE PROLAPSUS VAGINÆ.*

By HAL. L. BALLENGER, Plainwell, Mich.

This is a condition I have met with a number of times in the last three years, and have found it following prolapsed uterus of the previous year.

The disease is caused by the extension of the ligaments of the uterus and its displacement backward; there is a cauliflower growth at the os, which varies from eight to fifteen centimetres in length and from four to eight centimetres in diameter. It is commonest during the last six weeks of pregnancy. A large portion of the vagina protrudes through the vulva, and in the centre of the large swollen mass you see the os, which becomes dried and black if the prolapse is of very long standing, and all attempts to replace and retain it have proven useless in my experience because the patient strains continually.

Now, I wish to bring to your notice the last three cases where the prolapse was complete.

The first two were replaced and every conceivable means taken to retain them, but to no avail, and they were both destroyed by the owners; but the third recovered after the following treatment:

On December 3d last was called to see a Jersey cow, nine years old, belonging to Mr. De Yoe, of Cooper Centre. On arriving I found her down, unable to rise, and straining some. I was informed she had been in this condition for about thirty hours. I found the os protruding about fifteen centimetres, very much inflamed, dirty and swollen. After thoroughly cleansing the parts, I replaced them, gave two grs. morphine hypodermically, and left the same to be given every four hours.

Was called again at 6 P. M. and found her worse than in the morning and straining violently; replaced it same as before, but could not retain it. Then the owner wanted her destroyed, but I persuaded him to let me operate, which I did in the following manner: Drawing the os uterus through the vulva as far as possible, I removed about twelve centimetres with a scalpel, leaving the os about three centimetres long; then washed out the vagina with a creolin solution, and left the same to be used twice daily. The cow appeared much better the following day, and ate and drank a little. The next day she was able to rise and had no more trouble. She gave birth to a calf on Christmas and has been doing well ever since with the exception that the placenta had to be removed, which was done by their local "cow doctor."

*Read before the Michigan State Veterinary Medical Association, February, 1903.

IS ACTINOBACILLOSIS IN MICHIGAN CATTLE?

By HENRY HAYNES, Jackson, Mich.

On Feb. 1, I was called about ten miles from the city to, if possible, diagnose a disease existing among a herd of cattle (seventy-six in number) of cross-breeding, consisting of cows, heifers and steers, ranging in age from one to seven years. Upon my arrival the history given was as follows: Late in September a two-year-old polled Angus and Jersey-bred steer was noticed to have

a troublesome cough, and by the last of November he was much emaciated, raising large quantities of yellow mucus, and saliva was constantly dribbling from his mouth. He was becoming stiff, and moved laggardly about. Ulcerations were now appearing on various portions of the body; especially were his limbs swollen and breaking out as far down as the coronet. He was now taken from the herd to the basement of a well-arranged barn, where he lingered until Dec. 1st, being simply a shapeless mass of skin and bones. Up to this time nothing amiss was discovered with any of the other animals, but Jan. 14th the same external lesions and cough were manifest in another two-year-old steer, and on the 20th another presented the same appearance of the above trouble. After a thorough investigation of the kind of pasture and water accommodations, feed and stabling, all of which I found to be of the best, I now determined

to obtain specimens of pus from each of the three presented in the accompanying photo for microscopic use. In character it was milky white or slightly greenish in color, very sticky and pasty, viscid, little or no smell, while that of the jaw lesions was calcareous and yellow. These three by consent of the owners were brought to a glue-rending plant, where they were photographed, and then a post-mortem was held, it being witnessed by State Live Stock Commissioner Taylor and other prominent gentlemen.

As stated by M. Nocard, in the English *Journal*, February No., on page 110, the lymphatics were hypertrophied, nodulated and usually hard. Only in one instance, that of steer No. 3, was one found on the bronchi; that was caseous and softened in the centre. Prominent bacteriologists were supplied with pus specimens, some of whom have pronounced it the actinobacillosis of Prof. Ligniéres and Spits and M. Nocard.

CYSTICERCUS BOVIS INFESTATION IN A STEER.

By J. MADSEN, D. V. M., Inspector Bureau of Animal Industry, Kansas City, Kas.

A bunch of 65 very fat steers, four to five years of age, was brought from Beloit, Kas., to Kansas City and sold to one of the large slaughtering establishments. As they were destined for interstate trade they were subjected to post-mortem examination. Of the lot 23 proved to be affected by tuberculosis in a very light degree. The carcass of one of this number was taken upon casual glance to be affected with tuberculosis on the strength of some small protuberances located upon the surface of the heart and visible through a slit in the pericardium. Upon further examination the diagnosis proved to be correct, as the posterior mediastinal and the right bronchial gland besides being enlarged also contained several small tuberculous foci. But the elevations on the surface of the heart proved on closer examination, contrary to my expectation, to be cystic in character. On section through the wall of the left ventricle all ages and sizes of cysts were to be found. Some of a younger age appeared to the naked eye merely as fibrous spots of the size of a pinhead. The older ones appeared on cross section like a cup-shaped cavity, large enough to receive the end of the little finger. Still others, instead of the cyst with its fluid and membranous sac, contained a homogeneous, grumous, yellowish material. The cysts were evenly distributed throughout the myo-

cardium of the ventricles and auricles alike, perhaps numbering in all not less than one thousand. They were also present in the para-auricular fat. The ones located immediately under the endocardium seemed to be of a more recent invasion and on account of being semi-transparent and protruding into the lumen of the heart gave to the surface the appearance of a skin affected by vesicular or bullous eczema.

The head belonging to the carcass was condemned and disposed of on the first examination and could not afterward be positively identified. Search for cysts in the muscles of the neck, intercostal, sublumbar and abdominal regions and in the fragment of the pillars of the diaphragm left in the carcass after the viscera had been removed gave a negative result. The heart was of normal size, its walls of normal thickness, and the valves not impaired except for two or three small cysts located in the root of one of them. No scar tissue could be found.

I made a macroscopic diagnosis of infestation with the *cysticercus bovis.* The heart was sent to Professor John J. Repp, of the Veterinary Department, Iowa State College, Ames, Iowa, who confirmed the diagnosis by microscopic examination.

On the whole, the post-mortem examination left in my mind the impression that the animal had suffered no ill effect, the tuberculosis and invasion of the cysticercus bovis notwithstanding.

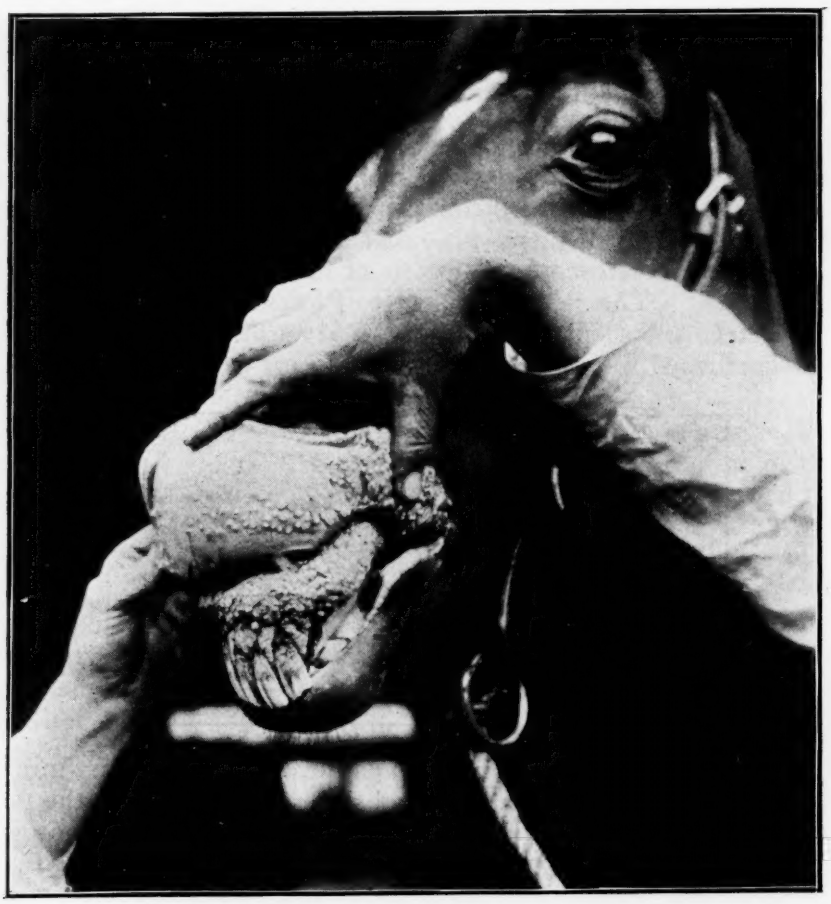
The accompanying figure from a photograph kindly furnished by Professor Repp gives a very good idea of the appearance of the heart.

PAPILLOMATOUS TUMORS IN A HORSE'S MOUTH.

By S. STEWART, M. D., V. S., Kansas City, Mo.

Recently a somewhat interesting case of slow-growing tumor presented at the Kansas City Veterinary College for exami-

nation. The animal was a medium-sized bay mare, about 23 or 24 years of age, and in excellent condition. Has been used as a light driver by the present owner for 15 years, and it was noted about the time he purchased her that there were a few small warty growths on the inner side of the upper lip. As they did no apparent harm no effort was made to remove them. As the years have gone by the growths have increased in number and



volume of mass, until they now offer lodgement for food substances which putrefy, giving forth an unpleasant odor; also the mass causes the mouth and lip to present a swollen appearance. This animal is still in good health and vigor and the owner decided not to have the case submitted to treatment for the removal of the neoformations. The slow and continuous growth and

increase in number of individual tumors make the case one of sufficient scientific interest to warrant a record of the same. There were no similar growths to be found in other parts of the body.

The accompanying illustration is a fair picture of the growths, which are papillomatous in character.

ACTINOMYCOSIS IN A COW.

By JOHN J. REPP, V. M. D., Ames, Iowa.

There was brought to my clinic at the Veterinary Hospital, Iowa State College, on June 6, 1900, a four-year-old polled Angus cow to be treated for a swelling under the jaw, from which pus was being discharged. The owner stated that it had existed for several months. A microscopic examination of the pus showed the disease to be actinomycosis. The mass was immediately under the larynx, filled up the space between the angles of the jaw and projected downward a very considerable distance. The skin was movable over it except at the most dependent part, where there was an orifice through which pus was being discharged. On account of the large size of the mass and its location, I hesitated somewhat to dissect it out, but finally decided to do so. The cow was cast on the grass and securely tied. She was not anæsthetized, a fact which I regretted before the operation was complete. The actinomycotic growth was completely removed by carefully cutting and tearing around it and ligating bleeding vessels. An enormous cavity was left, at the bottom of which the larynx was exposed. The cavity was packed with oakum, tape sutures were put into the skin and the edges of the wound drawn together. The next day the packing was removed and the wound subsequently treated by washing with an antiseptic solution and dusting on a powder of iodoform 1, tannic acid 2, and boric acid 4. On June 12th the cow was sent home and the owner instructed to continue the treatment. January 15th, 1901, the owner wrote me in reply to an inquiry that the wound healed nicely and that the cow had since been doing well. This case seems to me interesting from the surgical point of view only because of the large wound it was necessary to make in a rather dangerous situation in order to extirpate the mass.

FRACTURE OF SEVENTH AND EIGHTH RIBS IN A HORSE.

By C. S. BAXTER, V. S., Circleville, Kansas.

Apropos of the article by Dr. Drinkwater (AMERICAN VET-

ERINARY REVIEW, Vol XXVII, No. 2, page 143), I report the following:

On Jan. 23, 1900, a Mr. Carson brought to my farm a bay gelding, weight 1450, with a large growth or swelling on the off side of the thorax, with the following history: about twenty months previously, the horse one night got hurt in the stable; how he knew not; the swelling had gradually grown from that time till the present, which now measured 13½ inches long, 9¾ in width, and about 3½ inches thick; skin smooth, no nodules or signs of breaking. I lanced it at the most prominent point, and drew away about one and one-half gallons of pus, with some white granulous matter. Diagnosis then, broken rib or ribs. I then cast the horse, opened the tumor perpendicularly, 11 inches in length, and was dissecting down to the ribs when the owner stopped me. No argument would persuade him to allow me to proceed. I then packed the cavity with cupri sulphas, covered it with absorbent cotton, took eight stitches, and let the horse up. I instructed the owner to cut the stitches in five days, if not obliterated before, gave him sublimate solution to cleanse the wound. I saw the patient the following June. The swelling had gone, but a small fistulous opening remained, with a small amount of pus and decayed bone passing about every day. I think I would have made a complete cure had I cut down to ribs and removed the dead portion, which I would have done had the owner not stopped me. He said he "thought I was going to cut his horse in two." I admit it did look that way to one not used to the knife. Had Dr. Drinkwater treated his patient on the same lines, I am inclined to believe he would have prolonged the life and usefulness of the horse, if he did not obtain a perfect cure. Good drainage would have been a guard against septicæmia, which must have been his last trouble.

ATROPHY OF THE GLUTEAL MUSCLES OF A HORSE SUCCESSFULLY TREATED BY SATURATED SODIUM CHLORIDE SOLUTION.

By JOHN J. REPP, V. M. D., Ames, Ia.

May 2, 1900, there was brought to my clinic at the Veterinary Hospital, Iowa State College, a small white mare, six years old, to be treated for wasting of the rump muscles. The owner was uncertain how long the trouble had existed or what had caused it, but said it had been present for a long time. He kept driving her constantly.

It was found upon examination that the atrophy was con-

fined to the middle gluteus and the superficial gluteus muscles of the right side, both of which were atrophied to an extreme degree so as to produce marked depressions. The lameness was only slight. Apparently a combination of swinging-leg and supporting-leg lameness.

The animal was admitted to the hospital as an in-case. I decided to try as a therapeutic measure subcutaneous injections of saturated aqueous solution of sodium chloride over the affected area. The salt was heated in a pan over a Bunsen burner until it became quite hot in order to sterilize it. Distilled water was boiled in an Erlenmeyer flask and an excess of the sterile salt put into it and a cotton plug put in. To apply treatment the skin over the affected part was washed with 5 per cent. solution of carbolic acid in warm water; some of the solution was drawn into the syringe from the flask and a small amount injected at various points under the skin over the affected muscles. The animal was controlled by a twitch on the nose and the opposite hind leg drawn forward and lifted from the ground with a sideline. Considerable swelling and sometimes small abscesses would form at the points of injection. As soon as the inflammatory symptoms would subside, usually in three to five days, the injection was repeated. This treatment was continued until the mare was discharged on June 7th. At the time of leaving the hospital the condition of the muscles was considerably improved. January 17, 1901, the owner wrote me as follows: "The white mare which you treated for sweeny is now almost all right. The hip has filled out. I have been driving her and am well pleased with what I spent on her."

SOFT FIBROMA OF CIRCUMFLEX NERVE OF AGED MARE.

By JOHN J. REPP, V. M. D., Ames, Ia.

Some time since my attention was directed in the dissecting room of the Veterinary School at Ames to a tumor upon one of the nerves of the brachial plexus of an old mare being used by the students for dissection. Upon closer examination the tumor was found to be located upon the circumflex or axillary nerve where this nerve passes over the subscapularis muscle. The tumor was oval, one-half the size of an ordinary hen-egg, whitish, medium consistency, enclosed in a delicate capsule, and showed the nerve fibres coursing along one side of it. On microscopic section it was found to be a soft fibroma, unmixed with any other kind of tissue. It was suspected that it might show

in some parts the structure of a ganglional or fibrillar neuroma, but no archiblastic tissue could be found. This tumor was, therefore, one of the class commonly spoken of as false neuromas, a name for which there is really no warrant, as what is called a false neuroma is in reality not a neuroma at all. There was no history of any clinical symptom of the presence of this tumor.

AN UNUSUAL CASE OF PARTURIENT PARALYSIS.

By Dr. C. F. DAWSON, Lake City, Fla.

A large, fat, thoroughbred Jersey cow, belonging to the college herd, was reported "down" at 8 A. M. Responded at once, and found her in the characteristic position, and showing other symptoms of parturient paralysis. Consulted herd book, and found her only *seven months* pregnant. Temperature subnormal. In considerable distress. No evidence of threatened abortion. Has given birth to at least fifteen calves, eleven of which were females. Bowels constipated. Spinal reflexes of lumbar and sacral regions obtunded. Applied Schmidt's potassic-iodide treatment as a diagnostic agent, as I had never known of the condition to exist in the *pregnant* state. Gave 4-ounce doses of whisky every three hours. Removed by hand a large quantity of hard fæces, which was spotted with blood and mucus. Passed index finger into urethra and caused a large quantity of urine to pass. In seven hours, the animal was better, making efforts to rise. In ten hours the animal was much better, but still "down," resting on the abdomen. Next morning the animal was reported standing at the water trough. The udder was kept stripped for a day or two, and she has since made an uneventful recovery.

DR. VERANUS A. MOORE, of the New York State Veterinary College, Ithaca, N. Y., left on June 8 for California to aid the University of California in organizing work on the infectious diseases of poultry and other animals. He will spend the majority of his summer vacation at this work and in sightseeing.

GLANDERS IN NEWARK.—Two men have been attacked with a disease supposed to be glanders in Newark, N. J. One a stableman who was employed in a stable in which glanders appeared some months ago. The man is dead. Another is dying from the same disease. Five hundred horses have been attacked.—(*N. Y. Med. Journal, June 1.*)

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PARALYSIS OF THE OBTURATOR NERVE [*W. Willis, M. R. C. V. S.*].—In Möller's "Surgery" it is stated that the origin of this paralysis is unknown and that it is always difficult to make a diagnosis. The following cases are published by the author to add to the history of the trouble: The first case, observed about 1888, was a mare which had been lame for a week. There was considerable abduction of the leg while moving, principally in walking. Exploration of the pelvis, by vagina, revealed an ovoid tumor, situated on the pubis, on a level with the obturator foramen. It was evidently painful on pressure. After a few weeks the lameness improved and the mare was able to work. The abduction remained for a month longer and then disappeared. On examining by vagina a second time, some ten weeks after, a bony tumor as big as a goose-egg was detected over the obturator foramen. The second case occurred in 1894. The symptoms of the beginning made it appear that there was a fracture of the neck of the ilium; but no displacement took place. The leg was carried forward with difficulty and pain. Exploration of the pelvis made on the three first days of the lameness, revealed a tumor identical to the preceding. Abduction with rotation outwards was well marked during trotting. After a year the tumor was very small, but there were small bony growths over the bone. The author has seen other cases since, always accompanied by characteristic abduction. It is probable that the paralysis of the nerve is due to its being involved in the callous of the fractured pubis. Abduction is not observed immediately after the accident, but is concealed by the acute lameness resulting from the fracture. Anyhow, fracture without lesion of the nerve is not rare. Abduction is the consequence of the paralysis of the adductor muscles where the nerve ramifies.—(*Vet. Record.*) [This paralysis is recorded in Liautard's "Operative Surgery," under heading of "Fracture of the Pelvis."—(EDITOR).]

ŒSOPHAGEAL CASES [*C. Cunningham*].—For some little time several cases of this nature have been recorded in the English papers, and observations of interest as to the nature of

the obstruction causing the choking, as well as to the appropriate treatment to use, have been made. Among all of them those of the author are quite interesting. It was first a cow in which a probang, 5 feet 2 inches long, had been successfully used, but which nevertheless died, and at the post-mortem there was found: "A big hard mass in the superior mediastinum, about eight inches long, close to and involving the diaphragm —the transformed portion of the œsophagus—hard and indurated, and of long standing—its lining membrane rough and indented, hollowed out into pouches, like an aneurismal tumor, and in front of this mass a considerable rent in the slightly dilated and weakened part of the tube." In another case, in which the probang had failed its purpose, and when post-mortem was made, it showed "the mediastinal glands very much enlarged, one converted into a big hard tumor, probably tubercular, pressing on the tube and effectually preventing the passage of solid food or of any solid body whatever." In a third case the post-mortem "disclosed a big pouch in the œsophagus crammed with half-chewed fodder, near the stomach, with the tube itself filled up to the throat with beautifully arranged successive layers of chewed straw about 2½ inches long, all the straw and fibres lying parallel to each other and to the course of the organ." And, finally, in a fourth cow, where the probang was successfully used, but when it was drawn out the big wooden cupped end had parted company with its cane connection. It was necessary to resort to another use of the probang to push the mischievous wooden cup into the stomach, all of which relieved the case of choking. When later on the cow died because of pleuro-pneumonia, "the wooden cup was found in the stomach, little the worse apparently from its long immersion. The œsophagus was intact with no stricture nor injury whatsoever."—(*Vet. Record.*)

SHOULDER LAMENESS SUCCESSFULLY TREATED BY SUBCUTANEOUS INJECTION OF TURPENTINE [*H. Taylor, M. R. C. V. S.*].—The moment of treatment is not, properly speaking, adopted in the routine of practice; hence any case where it has been used deserves to be recorded, specially when it is successful. Such it happens with this horse, which was undoubtedly lame in the shoulder and for which usual counter-irritating treatment with antirheumatic remedies were prescribed with no good result, although they had been used for four months. At last it was decided as a *dernier ressort* to use turpentine, and four drachms of it were injected under the skin at a point just

opposite the spine of the scapula. For a short time uneasiness was exhibited by the patient, but it subsided. On the following day a swelling appeared at the point of inoculation and gradually increased, spreading down to the knee, forward to the neck, backward to the elbow and even between the fore legs. Of course, the leg was very stiff. There seemed to be fluid under the skin and it looked as if it would burst in one or two places. But gradually all was absorbed, the swelling diminished and disappeared. The horse trotted practically sound and was sent to work. Unfortunately there was no chance to follow the case, as the animal became lame with ringbone behind and was lost sight of.—(*Veterin. Journal.*)

When Should a Mare be Cleansed? [*R. W. Knowles, M. R. C. V. S.*].—This is a question that is very interesting to country practitioners, as some may undoubtedly meet with cases where interference may or may not be required. The author has had once the case of a mare where he pulled the placenta out twelve hours after the mare had foaled. The operation was well done, but septic metritis followed and the animal died. It is for this reason that he has changed his manner of doing, as shown by the following case out of many: A mare had a premature delivery on a Thursday morning very early. She did not clean, and began to be uneasy. She has some colicy pains, but yet her temperature and pulse are normal. On exploring the uterus, it is found that the membranes are firmly adherent on their whole surface. It is decided to wait. A dose of chlorodyne is given and injection of warm water and cresyl in the uterus ordered. The animal was visited twice a day and the same treatment continued, with febrifuges, as the indications were when the thermometer rose to 102. It was only on the Saturday, in the evening, that the placenta became loose and was extracted, with slight traction, 60 hours after foaling. Expectation has been the mode of Mr. Knowles, but if the case becomes alarming he "does not hesitate to pull his shirt off and separate the membranes from the uterine walls and take them away."—(*Vet. Record.*)

Impaction of the Single Colon [*E. W. Hoare, F. R. C. V. S.*].—A very interesting case, where errors of treatment (?) are suggested by the nature of the case and the lesions of post-mortem. It is that of a valuable hunter which was taken with abdominal intermittent pains, very severe and at short intervals. The author saw the horse the next day, when he witnessed one of the fits of acute pain, the animal laying down, groaning,

struggling with fore and hind legs, looking towards his flanks, and then apparently becoming easy. His pulse was not alarming, temperature 101°, no tympanites. Opium, æther nit., and linseed oil were given; warm water injection prescribed. The draught was given twice. The next day calomel and oil were prescribed, also injections, which were not retained. No change in the condition of the patient, no tympanites. The following day, no action of bowels, temperature 103°; glycerine injections (retained only a short time), calomel and oil. On the fourth day, still no action of the bowels, no intestinal murmur detected. Long tube injections are not retained. Calomel and oil are prescribed. On the last day, still no action from the bowels, no tympanites, general condition sinking. Death occurred during the day. At the post-mortem the small colon was found resembling a "large German sausage; it being distended with dry ingesta from its commencement in the large colon for about four feet. There was a small rupture of the coats, which was post-mortem. The liver was fatty and atrophied." The remarks of the author are: Errors as to treatment: no opiates should have been administered; would eserine have done well? doubtful, in considering the four feet of obstruction; were doses of calomel excessive? they with the oil failed to work; would aloes have worked better? At any rate, Mr. Hoare regrets he did not resort to laparotomy; but would it have been possible with such a large quantity of fæces? Diseased liver was never manifested, tympanites was never present; obstructed portion of the intestine was too far to be reached, even with a long rectum tube. All the circumstances in the case were against the most clever practitioner.—(*Veterin. Record.*)

THREE FRACTURES OF THE OS SUFFRAGINIS AT LONG INTERVALS IN THE SAME ANIMAL [*W. Lothian, M. R. C. V. S.*]. —This animal was half bred and high spirited, and to keep her down and less restive in harness, was submitted to comparatively hard and long work. She was twelve years old when the first accident took place. She was then drawing a heavy load through deep snow. It was during the winter of 1900. She became suddenly lame on the off hind leg with a fracture of the os suffraginis. She was treated and recovered. In June, 1902, while turned out to grass, she was found one morning lame on the near fore leg. There again the lameness had the same cause, a fracture of the os suffraginis. Placed under treatment and once more recovered. She returned to her work and kept at it

until February, 1903, when for a third time she became lame with a fracture of the os suffraginis of the near hind leg. This time the treatment was kept up only for a week, but on account of unfavorable symptoms, she was destroyed. All the bones of the body were examined and found to all appearances perfectly normal.—(*Veter. Journal.*)

INTESTINAL OBSTRUCTION DUE TO CALCULUS—LAPAROTOMY [*G. P. Male, M. R. C. V. S.*].—A failure, it is true, but not without importance, as it shows that if laparo-enterotomy can be performed in some cases, such as the extraction of a foreign body in the small colon, the operation becomes impracticable in others, as when the obstruction is in the first or the fourth portion of the large colon. The exact position of the calculus must be well made out before any surgical interference is resorted to. An old mare has had colicy pains, all the manifestations of an accumulation of fæces in the colon. Eserine, pilocarpine, repeated enemas, oil, etc., etc., have been given, but the results have not been very satisfactory. After six days, however, a slight improvement seems to manifest itself; but this is only temporary and it is only towards the fourteenth or fifteenth day that by a rectal examination a hard body is found and felt with the tips of the fingers in the intestines; but whether it is in the small or in the large bowel, it cannot be made out. The author decided to resort to laparotomy, but, when after having taken all antiseptic measures, he came to enter the abdominal cavity, he saw the impossibility to go any further. The calculus was found in the fourth portion of the great colon. This bowel being fixed to the first part of the colon, to the cæcum and to the abdominal walls, it was found quite impossible without rupturing the bowel to bring it within one foot of the flank incision. The opening of the flank was sewed up and the animal destroyed. The calculus weighed 3¾ pounds. It was rough and oval in shape, measuring 21 inches in the larger and 16½ in the smaller circumference.—(*Jour. of Comp. Path. and Therap.*)

GASTROTOMY IN A DOG [*Peter Wilson, M. R. C. V. S.*].—The history of a fox terrier puppy, which has the habit of playing with pieces of iron that he finds in his owner's forge and swallowing them. This lasted for some time without giving trouble apparently, but finally he became sick, refusing food, etc. In feeling and pressing the stomach, it is found hard; on auscultation, a sound such as might be produced by a miniature stone-crusher was heard, and when shaken, a sound of iron rat-

tling was distinctly audible. The operation is indicated and performed with all due precautions. Fifty-eight pieces of iron, weighing rather more than a quarter of a pound, were removed from the stomach. They were mostly old shoe nails, with a few old rivets and several splinters of iron. In two weeks the dog was well.—(*Journ. of Comp. Path. and Therap.*)

MALFORMATION OF THE TRACHEA [*J. R. Gobbold, M. R. C. V. S.*].—Certainly this is a curious case. In manipulating about the middle of the neck of an old pony the author felt what seemed to be a double trachea. One principal branch larger than the other, laying in its normal position, and another, smaller, more prominent, on the near side of the neck. With this exception, the wind of the horse was perfect. Questions of the author: Has any veterinarian seen such a case before? What is probably the cause of the accessory branch? Is it likely to be detrimental to the animal?—(*Vet. Record.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

CARCINOMA OF THE STOMACH INVOLVING THE DIAPHRAGM [*M. Savary*].—"Jaton" is a nine-year-old horse, who has lost flesh lately, and becomes weak at his work. The symptoms observed are: Temperature varying around 38°; marked emaciation; anæmia of the visible mucous membranes; lungs sound; no cough; no swelling of the extremities; appetite is delicate and poor; fæces normal, no colics; no lesions of the liver; urine normal in quantity, slightly albuminous. Examination of the heart reveals its beatings accelerated, but weak, the pulse thready and almost imperceptible. The first sound is heard at auscultation and followed by a slight wheezing, well heard at the base of the organ. The second sound is dull. A diagnosis is made of aortic contraction. Treatment is prescribed to this effect, but ultimately the animal died. At the post-mortem, which upset the diagnosis, a large tumor of the stomach was exposed. There are other slight changes of the serous membranes, liver and heart. The principal trouble involves the stomach, diaphragm and paragastric lymphatic glands. The anterior face of the left sac of the stomach is adherent to the diaphragm, which on the thoracic side shows large varicose veins and has the aspect of a wide cicatricial surface. The tumor ex-

tends from the cardia towards the left sac of the stomach, on a round surface of 20 to 25 centimetres in diameter. The lymphatic glands of the stomach are more or less hypertrophied. The tumor occupies the left *cul-de-sac* and is limited to it. It is directly adherent to the diaphragm, the coats of the stomach having disappeared. The gastric face of the neoplasm is infractuous, irregularly divided, friable. Histological examination classifies it as a scirrhus carcinoma of the stomach with extension to the diaphragm. It is singular that such lesions should exist without giving rise to some functional disturbances, and that their diagnosis is almost an impossibility.—(*Revue Vétérinaire.*)

RETRO-PHARYNGEAL ÆGAGROPILE IN A HORSE [*Mr. Vignier*].—Rare case, which is left, unfortunately, incomplete, as the author failed in obtaining previous history. A ten-year-old horse is bought at a fair, found roaring, and sold again. The second buyer finding that the horse is useless and unable to do any work, sells him to a butcher, who calls to take him home; but on his way the horse becomes so bad he is threatened with suffocation, and the butcher kills him by bleeding on the spot. As he dresses him and goes to cut the head from the neck, a foreign body drops out of the throat. It is an elliptoid mass, 25 centimetres long, 8 wide, and 6 thick, formed of hairs, mouse color—not that of the horse, which was a dark bay. All researches to know the previous history have failed. But it is evident that the severe roaring was altogether due to the presence of this foreign body, which in all probability had been situated in one of the guttural pouches. Schampp has found a mass of triturated food weighing 800 grammes; and Rosenbilde has seen one of similar nature which had the dimensions of a man's head. Ægagropile has not been mentioned before this. —(*Revue Veterin.*)

WHO HOLDS THE RECORD OF LONGEVITY IN THE HORSE? [*G. Chenier*].—After the record of the three old horses reported by Meynard of 43 years, by Edwards of "Old Tom," aged 43, and by one of the veterinary papers in Vienna of 45, comes that of the author, who knew the animal when he was young and died at the age of 56. He was born of a Russian mare in 1814, was kept by the first owner until he was 20; he was sold then to a clergyman, who did not abuse him, and finally when 40 years old was sold again, to a third party, who made him work hard. He died in 1870, during the German invasion.—(*Revue Gen. de. Med. Vet.*)

PUNCTURE OF THE BLADDER THROUGH THE RECTUM [*Mr. P. Matrion*].—In cases of overfilled bladder the surgeon has to-day only one of two ways to empty it—ischial urethrotomy and catheterization of the urethra. The first is quick but bloody and liable to be followed by complications. The second is long, sometimes difficult and not without danger; it is impracticable in cattle. The author proposes a third operation, which he claims is rapid, efficacious and elegant (?). It is to puncture through the rectum—a puncture that is perfectly innocuous and leaving no blemishes. He uses a capillary trocar, 30 centimetres long, slightly curved on its long axis. The condition of the bladder well made out, the puncture is made on the median line, carefully, without rough pushing, until the resistance is overcome. The evacuation of the liquid is done slowly. The operation can be performed several times in one day. The author has made observations on 33 subjects (27 horses, 3 steers and 3 rams). One horse only died—the post-mortem shows how rapidly and completely the holes of the puncture had closed. The indications of this operation are: (1) When the obstacle to micturation is due to spasms of the neck, the operation is then generally curative; (2) when there is a urethral or vesical calculus; after the puncture, the animal can be cast and secured without danger of rupture of the bladder. Likewise in cases of urethral stricture, œdema of the sheath, phymosis or paraphymosis; (3) finally, when a calculus cannot be removed, or its removal is dangerous, the puncture will allow an extent of life to permit better sale for butchery.—(*Rev. Gen. de Med. Vét.*) [By the use of this operation, we, several years ago, allowed a camel to live four days, permitting the construction of an instrument with which we had hoped to remove a calculus from the urethra. —(EDITOR).]

A JUSTIFIED CASE OF AMPUTATION IN LARGE RUMINANTS [*J. G.*].—There are indications where in such animals such surgical operation is justifiable. The animal was a milch cow, of first class breed and excellent producer, giving some 30 litres of milk a day. One day she became lame on one hind leg; it was swollen at the fetlock and no weight was carried on that leg. An empiric was called and put a blister on, which did no good to the lameness. After two months a veterinarian was called, who had the wise curiosity to look at the foot for the cause of the lameness. There he found a nail in one of the claws, which had entered the articulation of the second and third phalanges. Around the foreign body there was an exten-

sive mortification of tissue. The lesion was such that it was decided to amputate the claw and remove all the dead tissues. This was done accordingly, a thick antiseptic dressing was applied, and about one month after the cicatrix was sufficiently firm for the animal to walk without much difficulty.—(*Progrès Vétérinaire.*)

ENORMOUS COLLECTION OF PUS IN A STEER [*P. Bitard*].—According to the author, there seems to be a general impression that large purulent collections cannot occur in bovines. This subject is a six-year-old steer which for a year has had on the outside of the right thigh a round swelling. At first it was as big as the fist of a man, and gradually increased. No attention was paid to it, as it did not interfere with the work of the animal, and during the first ten months nothing was done to remove the trouble. But at last the swelling began to get large and formed a tumor, semi-spherical, situated on the outside of the middle of the thigh, extending upwards as far as the hip-joint and near the point of the ilium; in front it reached the stifle and downwards to the superior third of the leg. An exploring needle was thrust into the thick wall on the lower part, a directory introduced into the tract of the needle, and a free incision made upwards with a bistoury sliding in the groove of the directory. Nine litres of pus were collected, with a few necrotic pieces of connective tissue and tendons. Repeated injections of tepid antiseptic solutions were ordered as treatment. Result, recovery.—(*Progrès Vétérin.*)

INFECTION FOLLOWING THE DEATH OF A FŒTUS IN A COW [*MM. Mathis and Bali*].—The animal has a miserable appearance; she is quite thin, appetite poor and irregular; beatings of the heart 100 to 110 per minute. There is a marked swelling, hard, not warm nor painful, at the root of the right hind leg. Respiration is quiet, irregular, or again hurried. Nothing abnormal on auscultation. Temperature 39°4. Such was her condition when brought to the Lyon Veterinary School clinic on Oct. 6th. On the 9th exploration of the pelvis reveals a gravid uterus; the cow is in calf, about four months gone, it is supposed. On the 14th there is purulent discharge by the vulva. Two membranes pass the neck of the uterus. The cow will abort. The fœtus is extracted; it is macerated, soft and odorless. The membranes are likewise soft, macerated and friable; the cotyledons are pale, washy and float in a milky, purulent fluid. The uterus is washed with cresyled water. The temperature is 39°5; the appetite is good. The following days

the cow remains lying down, eats little, drops into a progressive cachexia, and is destroyed. At the post-mortem the heart presented centres of acute endocarditis near the tricuspid and mitral valves and the posterior vena cava. The liver has biliary cirrhosis. The kidneys are yellow, soft and marked with reddish spots. The uterus shows lesions of chronic metritis. Three encysted abscesses are found in the broad ligaments. The muscular tissue shows marked lesions of myositis. Very minute abscesses are found in the primary fasciculi. Near the gluteal region, there is quite a large centre of necrosis and suppuration. From these, the conclusion is that the lesions were metastatic or secondary to the uterine infection, and that death was due to general infection.—(*Journ. de Zoötechnie.*)

COLD ABSCESS OF THE PELVIS IN A MARE [*M. P. Leblanc*].—This mare was seven years old and had been recently sold, but her owner kept her for a short time only as she was delicate to feed, losing flesh and in a general bad condition. That was all of her history. She was placed under observation. She is indeed looking badly; her coat is dull and staring, her belly tucked up, little appetite, or what there is of it is very capricious. All her functions seem normal. After two or three days it is observed that she frequently stretched herself behind as if to micturate or defecate; but then throws out only a small quantity of urine and small, hard, coated droppings. Before these functions, she has slight colic. Rectal examination is made with difficulty; the arm feels a marked reduction in the size of the rectum to such extent, that it is impossible to dilate the organ and that the arm has to be withdrawn, so painful is the pressure upon it. Examination per vagina reveals the presence of an enormous tumor, as big as a man's head, hard, elastic and fluctuating, occupying the connective tissue between the rectum and the vagina. Pressing upon this organ, it compresses downwards the urethra and the meatus and upwards the terminal portion of the rectum. The difficulty of micturation and of defecation is readily explained. Puncture of this cold abscess is made with the vaginotomy knife, the collection being opened on its lower part; two litres of white yellowish pus are extracted. Antiseptic washings complete the treatment. Recovery was very rapid. This observation comes to be added to those already numerous of pelvic abscesses from strangles.—(*Journ. de Zoötechnié.*)

A CASE OF HELMINTHIASIS OF THE SPLANCHNIC SEROUS MEMBRANES, WITH DEATH [*MM. Lefebvre and Guérin*].—

A low-bred dog, born in 1898, has been kept in a house, taking his exercise in a large garden; has never been outdoors, and has deen fed exclusively with milk, soup and remains from the table. In 1901, he passed a few flat worms, which were considered as segments of tape worms. In 1902 he has a pulmonary sickness, not well characterized; there is cough, no discharge from the nose, the respiration is accelerated. With ordinary treatment, he seems to have entirely recovered after a dozen of days. A few months later, the same symptoms return, but much more acute. Respiration very difficult, inspiration quite hard, choking spells, threatening asphyxia. Percussion reveals dullness in both lungs. All treatment fails. The dog dies. At the post-mortem, a large number of flat worms were found disseminated over the surface of the peritoneum. All the abdominal organs were sound. In the thorax a quantity of those worms are also found over the pleura and gathered specially on the lower part of the chest. The serous membrane is thickened, rose colored and easily separated from the lung tissue; which is itself retracted, and resembles much the old gray hepatization of chronic pneumonia. The worms examined by Prof. Railliet, of Alfort, were recognized as *Dithyridimis Baillettê* or *Plerocercoides Baillettê*.—(*Bullet. de la Soc. Cent.*)

WINDING UP FOOT-AND-MOUTH DISEASE.—The Secretary of Agriculture, having completed a careful investigation of the States now in quarantine for foot-and-mouth disease, through the inspectors of the Bureau of Animal Industry, without finding any cases of the disease during the last five weeks, decided to offer a reward for all cases that were reported prior to July 1, the object being to ascertain with all possible certainty that the disease has been entirely eradicated, before the quarantine is removed and foreign countries are asked to again receive live stock from New England ports. It is believed that the disease has been entirely eradicated, and this reward was offered as a final effort to discover any traces of contagion that may possibly exist. The following is the text of the offer issued by the Secretary on June 16: "A reward of two hundred and fifty dollars ($250.00) will be paid to any person who shall, before June 30, 1903, first report to the Chief of the Bureau of Animal Industry, Washington D. C., the existence of any specific case or cases of foot-and-mouth disease (epizoötic aphtha) in any animal or animals in either Massachusetts or New Hampshire. The nature of the disease must be confirmed by the inspectors of this Department."

ABSTRACTS FROM MEDICAL LITERATURE.

Under the Direction of E. M. RANCK, V. M. D., Natchez, Miss.

ANTIDOTE FOR FORMALDEHYDE.—In view of the fact that this chemical is coming more and more into general use as a disinfectant, cases of poisoning from it will become more frequent. We have an easily accessible and reliable antidote in ammonia water. It may be given in the form of ammonia water (a few drops well diluted) or the aromatic spirit of a solution of ammonium acetate.—(*Merck's Archives; Modern Medicine, Vol. XII, No. 4.*)

STARCH-DIGESTING FERMENT IN MILK AND URINE.—Nobécourt and Sevin (*Bulletins de la Societe de la Pediatric de Paris*, January, 1902) have shown that both the milk and the urine of cows and of nursing women contain a starch-digesting ferment.—(*Modern Medicine, Vol. XII, No. 4, April, 1903.*)

PASTEUR INSTITUTE, NEW YORK CITY.—During the month of May, 23 cases of rabies were reported by the Pasteur Institute. This makes 172 cases occurring between January 1 and June 1 in New York City.—(*Phil. Med. Jour., No. 283.*)

BEE STINGS FOR RHEUMATISM.—Dr. Perc, of Marburg, delivered an address last week on the healing properties of bee stings in articular and muscular rheumatism. He pointed out that it has been known from time immemorial as a cure among the poorer classes of people, who have no faith in medical science. He has tested it thoroughly and proved its efficiency in 500 cases. If a patient is suffering from rheumatism, the stung part does not swell at once, not until the bee poison is frequently introduced. Then the rheumatic pain gradually vanishes. Dr. Perc allows his patients to be stung at first by a few bees, and then gradually increases the number. In one sitting he allows seventy bees to sting the patient. He describes the case of a woman who suffered excruciating torture from rheumatism. In the course of treatment she was stung 6,952 times, and this resulted in a complete cure.—(*Phil. Med. Journal, June 13, 1903.*)

THE ALBUMINS OF MILK.—Schlossman and Moro have studied the albuminous bodies in milks. They performed a series of precipitations with various chemical substances, and found that in addition to casein another albuminous body was present. They found that this albuminous body had the fol-

lowing composition: C. 47.91% ; H. 7% ; N. 14.74% ; S. 1.65%. This they name lactalbumin. In order to determine whether these albuminous bodies were the same in human and in cows' milk, they injected rabbits with them and found that the rabbits injected with lactalbumin gave a positive precipitation with human, with cow casein, or cow lactalbumin, but no precipitation with human lactalbumin. Rabbits injected with human lactalbumin gave no precipitation with cow lactalbumin. Therefore the albumins with cows' milk are biologically different with those in woman's milk. This is one of the reasons why natural feeding is so superior to artificial feeding for infants.—(*Muenchener Medicinische Wochenschrift, Apr. 7, 1903; Phila. Med. Journal.*)

EXTERNAL ANTHRAX IN HUMAN BEINGS.—Federschmidt reports 10 cases of malignant pustule in human beings, 3 occurring in his own experience, treated by excision, and 7 treated expectantly by his colleagues. All the cases occurred among brushmakers. The 3 cases treated by excision were promptly cured. Other patients were treated by carbolic acid internally, and other forms of local and general treatment. Two died, and others recovered after separation of the slough which sometimes required subsequent plastic operation. He believes that prompt excision is the best treatment.—(*Muenchener Medicinische Wochenschrift, April 7, 1903; Philadelphia Medical Journal.*)

GEO. WYNDHAM NEWTON, of Cheltenham, England, student at the New York State Veterinary College, is assistant to Dr. T. S. Childs, of Saratoga Springs, New York, for the season of 1903.

DR. REYNOLDS' FORTHCOMING BOOK.—There is announced as nearly ready for distribution a text-book entitled "Veterinary Studies for Agricultural Students," from the pen of that sterling veterinarian, Dr. M. H. Reynolds, of the University of Minnesota. It embodies lecture-courses which he has given his own students for the past ten years, modified from time to time as experience suggested. Dr. Reynolds has always conducted his course in such a way as to avoid turning out empirics, and the material for this volume is so selected and arranged that it can hardly be used as a work of reference for this purpose. We shall await its appearance with considerable interest, since the subject treated of has been engaging the attention of the profession quite recently.

ARMY VETERINARY DEPARTMENT.

This REVIEW department was opened in the March number, and its object was there explained—the betterment of the Army Veterinary Service, through affording a forum for the discussion of subjects in which army veterinarians are deeply interested, and which are at the same time of interest and value to veterinary readers generally. The profession, and particularly army veterinarians, are invited to contribute communications, original articles, items of news, etc.

DR. HILL'S PLAN TO IMPROVE THE ARMY SERVICE.

Referring to the communication of Dr. W. P. Hill, Veterinarian 12th Cavalry, Fort Clark, Texas, which appeared in the June REVIEW, page 257, the following telegram explains itself:

"FORT ASSINABOINE, MONTANA, June 19, 1903.

"*Editors American Veterinary Review:*

"Please state in 'Army Veterinary Department' that Dr. Hill's proposition regarding legislation will not be acceptable, as outside influence is forbidden by the Secretary of War. The proper way is a memorial through official channels, referred to general staff, and, if approved, embodied in army legislation.

"SCHWARZKOPF."

SOME STARTLING FACTS AND SOME PERTINENT SUGGESTIONS.

BATANGAS, PROV. OF BATANGAS, P. I., May 5, 1903.

Editors American Veterinary Review:

DEAR SIRS:—I am very glad that you have consented to allow us a space in the monthly editions of your valuable periodical, and believe it will be appreciated by all veterinarians in the service.

I feel somewhat backward about expressing my opinion as regards the official or social position of the Army Veterinarian, being merely a recruit in the American service; but I do know that unless we pull together and not let individual prejudices influence our judgments as regards mutual benefits, nothing can be accomplished in the way of upholding our profession or advancement as regards status.

I believe every experienced officer in the mounted branch of the service is in favor of the advancement of veterinarians, but

some of the younger ones, especially those who have come in lately from the volunteers or civil life, are prejudiced, not because the veterinarian is a veterinarian, but (like a child with a new and expensive toy, especially if he has never had anything but a cheap toy before) they are jealous and do not want any one but themselves to have it (rank for instance). It is quite certain that the average veterinarian in the Army is the equal, educationally, morally and socially, of the average Army officer, and certainly superior to some. Most of us are now serving with some officers who were in the ranks, or working on farms and in stores while we were veterinarians in the Army. Of course they rank us now. A number of reports that are made out on the diseases of army animals and veterinarians are made out by inexperienced officers, who have not been long in the service, some of them never having mounted a horse before entering.

It is only the other day that I saw in the *Great Round World*, published at 150 Fifth Ave., New York, March 7th, 1903, the following: "The *Buffalo Express* says Captain Butt,* who has charge of the land transportation for the Army, speaks warmly of native labor. Four native farriers made such marked advance in their profession that they have taken the place of American veterinary surgeons, and are treating complicated diseases without direction, in the saddle and paint shops, where *greater skill* is required," etc., etc.

I notice a long report upon diseases of army horses in Gen. Chafee's report by the same gentleman.

There have also been sent down here from Manila three Americans who are taking the place of veterinarians—two chronic drunks and one late teamster, all unqualified men. Is it any wonder that army animals have died in such large numbers out here? At this post over six hundred animals in the Quartermaster's corral have died during these last three years, and, although we have more troop horses at this post, only about thirty have died in the same length of time, and all because ignorant men have not taken simple hygienic precautions.

It seems to me that every veterinarian employed by the Quartermaster's Department should be qualified, and stand a fair examination, much the same as a contract surgeon is required to do.

As regards army veterinarians, the entrance examination

* Archibald Butt, entered the regular Army May 15, 1901, as Captain and Quartermaster.

might be with advantage made more severe and the subjects more varied (perhaps this has been done since I entered). He should be a commissioned officer, as that is the only man that an enlisted man really respects officially, and without respect and immediate obedience to orders a veterinarian is unable thoroughly to perform his duty. We can clean out these contagious diseases if given a chance. Usually the person detailed to assist a veterinarian in the hospital is either a teamster or common homboes. It would be less expensive to the Government and give better results if enlisted men were thoroughly trained as farriers and placed under the orders of the veterinarian.

Officers sometimes interfere with the work of the veterinarian. At one post where glanders had broken out in a troop they lost over forty horses, simply because the troop commander, a green officer from a volunteer foot regiment, refused to isolate suspected and glandered animals from the others. At all other posts that I visit I have been allowed to use my own methods in regard to veterinary matters, and always had the ready assistance of the officers in command. It is absolutely necessary that the veterinarian should be allowed to use his own judgment in regard to his special work to get the best results.

I shall watch with interest the columns of the "Army Veterinary Department" for views and experiences of different veterinary officers.

Very respectfully,

COLEMAN NOCKOLDS
Vet. 1st Cavalry.

ARMY VETERINARY DEPARTMENT NOTES.

COLEMAN NOCKOLDS, M. D., V. S., Veterinarian 1st Cavalry, U. S. A., who has for the last three years been stationed at Batangas, Philippines, and who has furnished so many valuable contributions to our literature through the REVIEW during that time, left with his regiment for the United States on May 5th, and will be temporarily stationed at Fort Clark, Texas. He will probably spend a four-months leave in Europe, and then return to the Philippines to work on "surra," with the mysteries of which the Doctor has acquired a great fascination.

DR. S. E. HERSHEY, Charleston, W. Va., writes: "I would like to inquire through the REVIEW if any practitioner has been using gelsemium to any extent in tetanus, and, if so, what has been his success with it."

CORRESPONDENCE.

A CONSISTENT ABRASION IN YOUNG COLTS—AN APPEAL FOR EXPERIENCES.

STATE EXPERIMENT STATION, BATON ROUGE, LA., May 26, 1903.

Editors American Veterinary Review:

DEAR SIRS:—A short time ago a friend of mine, who is somewhat of a naturalist, and a very close observer, drew my attention to a condition on the outside of the hocks of young foals which I had not previously observed as occurring with any degree of frequency; and I would be glad to know, through the REVIEW, if readers have noticed it as a prevalent lesion, and their ideas as to its cause.

My friend observed in some twenty-five or thirty foals, from two or three days to eight or ten days old, and almost without exception, an abrasion appearing on the skin at the hollow in front of the tendo-achilles and point of the os calcis; or, in other words, at the point where thoroughpin occurs in older animals, but only on the outside. The hair of the part begins to stand on end, and ultimately a sore forms, which resembles, somewhat, the shape of a man's finger. My friend remarked to me that since his attention was first attracted to it, he had seen the condition so often that he began to think it was "a trade-mark of colthood."

Without having investigated the matter, I am inclined to believe that the "little fellow" rubs or abraids the part when lying down, or, perhaps, when getting up also; and that, by compression of the hock-joint, the capsule, with its synovial contents, is bulged out postero-laterally, the outside, only, coming in contact with the ground. But, with us, I think there is, probably, another potent reason. Mares and foals are frequently allowed to run at large on country roads, and on other places devoid of grass, such as bare, rough, sandy places in old pasture fields and in the woods. If we connect this sort of environment with the other conditions mentioned, it is possible, perhaps, to account for the abrasion. It seems to be quite prevalent, however, in this section of the country, but I question if it would be so under different conditions of environment where irritation would not be so produced. At least, I have never observed it, nor had it called to my attention, where mares and foals were placed in fields thickly covered with pas-

ture grasses, or where plenty of good soft bedding was used in sheds, yards, or other enclosures.

I should be extremely glad to have, through the REVIEW, if you can spare the space, the experience of its readers with reference to this matter. It may not be of any great economic importance, but it seems to me to be sufficiently interesting to elicit the observations of others on the subject.

Very truly yours,

W. H. DALRYMPLE, M. R. C. V. S.

DIVISION OF VETERINARY SCIENCE, IOWA STATE COLLEGE.

AMES, IOWA, June 19, 1903.

Editors American Veterinary Review:

DEAR SIRS:—The Division of Veterinary Science of the Iowa State College has issued catalogues announcing an extension of the course from three to four years of nine months each. This change is made that there may be embraced within the veterinary curriculum thorough graded courses in stock judging, animal nutrition and principles of breeding. This is something of a departure, but it has not been made without conservative thought.

Animal husbandry as now taught is a comparatively new branch of agriculture. It is so closely allied with veterinary science that it is very properly within the province of a college of veterinary science to offer work in animal husbandry lines. This idea was expressed by President Leonard Pearson in his address before the A. V. M. A. in 1900. In a number of the agricultural colleges and experiment stations the work in animal husbandry and veterinary science is combined and conducted by one instructor. There are now committees on animal husbandry in some of our veterinary medical societies, and in the report of one of these is noted the assertion that if there was no animal husbandry the veterinarian would go. On the other hand, nothing could more forcibly demonstrate the dependence of the vast live-stock interests of the country upon the sanitary control work of the veterinarian than the recent outbreak of foot-and-mouth disease. Thus with the advance of veterinary science on an independent basis and with the development of the live-stock industry, the natural trend is toward an association of these closely allied interests. Perhaps the best example of such association is offered by the Bureau of Animal Industry. Established by the United States Department of Agriculture for the

purpose of fostering the animal industry of the country in every possible way, its present efficiency is only possible under the direction of a veterinarian.

The notion prevails among stock-growers that the veterinarian has nothing in common with them, knows very little of their interests and is only concerned when afforded an opportunity to apply the knife or administer a physic ball. Be that as it may, the fact remains that the veterinary practitioner may be of much greater service to a client when trained in all that pertains to animals in health as well as in disease. The experiment station veterinarian falls short of the mission of that office if he knows nothing but the pathological phases of animal life. A short time ago the chief inspector at one of our largest Bureau Stations remarked: "If there is anything about which I know nothing, it is a fat steer." And there are thousands to be seen from his office window daily. The matter of balancing rations and judging systematically cattle, sheep or swine is truly all too foreign to the average veterinarian. And, yet, should he not with his training in physiological phenomena be the really scientific feeder, and by his knowledge of anatomy, the competent judge? It is with a view to thus broaden the scope of veterinary education that the Iowa State College has taken the initiative in introducing animal husbandry work into the regular veterinary course.

In point of equipment and systematic outline of the work presented, the Department of Animal Husbandry of the Iowa State College is unsurpassed. Types of all representative breeds of horses, cattle, sheep and swine are maintained on the college farm and the practical instruction offered is most thorough. The veterinary students enter the regular classes, receiving the same training as the agricultural students in these courses. This work is preceded, however, in the veterinary curriculum by anatomy and physiology.

In commenting on the new course, the question has been raised as to whether or no the time required to complete the course will not bar many men who might otherwise attend. The Division of Veterinary Science is not dependent upon the number of matriculants for its maintenance, and, since it is the character and not the number of graduates to be considered, the faculty believes itself fully warranted in making the change. It seems reasonable that the additional advantages of the four-year course will prove sufficiently attractive to offset the length of course in deterring students from entering. Certain it is that

those men who do complete the course will be veterinarians in the broadest sense of the term, before whom a vast field is open.

The Division of Veterinary Medicine of the Iowa State College is just entering upon its twenty-second year. Among its graduates are a large number of the experiment station veterinarians of the present time and it is well represented in Bureau service and in the Army.

At a recent meeting of the Board of Trustees Dr. John H. McNeall, for three years professor of anatomy and surgery, was elected Dean of the veterinary faculty. This appointment is a source of gratification to the other members of the faculty and friends of the institution. Dr. McNeall's home is in Bowen, Ill., where he conducted a large breeding establishment in partnership with his two brothers. He is a graduate of the Veterinary Department of the University of Pennsylvania. Before being called to the chair in the Iowa State College, he was employed by the Bureau successively in Buffalo, Boston and on the sheep ranges of the Northwest. The policy of the Division as outlined by Dean McNeall is broad and progressive and he has the confidence and coöperation of his colleagues in its execution.

With the election of a Dean, an extension and revision of the course, and a marked increase in attendance the past year, the present outlook for the division is very reassuring.

Very truly, CARL W. GAY, V. M. D.

OBITUARY.

DR. T. B. NEWBY, M. D. V., V. S., Secretary of the McKillip Veterinary College, Chicago, Ill., died on the 17th ult., of cerebral meningitis in a hospital at Windsor, Ill. He has occupied the chair of materia medica at McKillip for the past two years, and in announcing his demise President McKillip spoke feelingly of his late colleague.

A DOCTOR'S AUTOMOBILE BLOWS UP.—Just as Dr. Silas C. Blaisdell, surgeon-in-chief of the Eastern District Hospital, alighted from his automobile outside his home in Bedford Avenue, Brooklyn, recently, the machine exploded with a terrific noise that shook the neighborhood. Many windows were broken and pieces of the automobile were hurled fifty to a hundred feet in all directions. Dr. Blaisdell was, fortunately, not injured.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

AMES, IOWA, June 18, 1903.

Editors American Veterinary Review :

DEAR SIRS : In addition to the part of the programme of the Ottawa meeting hitherto reported, I am pleased to be able to say that the following contributions have been received :

"Cow-Pox, Varicella and Furunculosis in the South," C. A. Cary, Auburn, Ala.

"Meat and Milk Inspection," M. E. Knowles, Helena, Mont.

"Malignant Tumors," D. King Smith, Toronto, Ont.

"Unusual Lesions of Tuberculosis Found in Abattoir Inspection," R. H. Harrison, Milwaukee, Wis.

"Experiments with the Stomach Worm in Sheep," A. S. Wheeler, Biltmore, N. C.

"The Uses of Mallein in Dealing with Glanders," J. G. Rutherford, Ottawa, Can.

"Canine Distemper," Lemuel Pope, Jr., Portsmouth, N. H.

"Vesicular Exanthema of Horses," Paul Fischer, Columbus, O.

The Honorable Senator W. C. Edwards, M. P., proprietor of the famous Pine Grove Stock Farm, Rockland, Ont., will present to the Association an address entitled "The Bang System for the Eradication of Tuberculosis in Cattle as Practised upon the Pine Grove Stock Farm, Ontario, Canada." Senator Edwards is a thoroughly scientific breeder and is the pioneer in the use of the Bang system in America. He is an unusually entertaining and instructive speaker. His address promises to be a very attractive feature of the meeting.

Dr. J. G. Rutherford, Chairman of the Local Committee, authorizes me to announce that the Honorable Sidney Fisher, Minister of Agriculture for the Dominion of Canada, will address the Association at one of its sessions. An address coming from the chief agricultural officer of the Dominion will be of great interest and profit to those in attendance and will be highly appreciated.

Other titles of papers are yet to be announced by our members. There is need, however, for additional papers and it is hoped that some of the members may yet send in titles. This should be done at once, as the programme must very soon be

completed. In order to keep up our record of progress the Ottawa meeting must surpass all others.

It is reported to me on behalf of the Local Committee of Arrangements by Dr. Rutherford, Chairman, that satisfactory arrangements are being made for the entertainment and the clinic and that this part of our meeting will be successful.

On Wednesday, Sept. 2, at 8 P. M., there will be a session of the Association at which Dr. William Dougherty, of Baltimore, will present for discussion his plan for the formation of a Mutual Benefit Society for the veterinarians of America.

Assurance is given by the Central Passenger Association that a special rate of one and one-third fare, certificate plan, will be granted in its territory. The Western Passenger Association has not yet acted in the matter of rates, but will doubtless grant our request.

Veterinarians throughout America, whether members or not, together with their friends, should be making their plans for a trip to Ottawa. Many who formerly resided in the eastern part of Canada or the United States will find this an excellent opportunity to visit their old homes and renew old acquaintances. Those who have not as yet visited Canada or the East can avail themselves of this occasion to get acquainted with the beautiful scenery, the great cities and the delightful home-life to be found in these older portions of our country. Ample provision will be made for the entertainment of the ladies and children and it is urged that members and visiting veterinarians bring their families with them.

Respectfully,

JOHN J. REPP, *Secretary.*

MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held in Waterville, April 8th, 1903, at the residence and hospital of Dr. A. Joly.

During the afternoon a clinic was held at Dr. Joly's hospital, at which a number of very interesting cases were introduced, among which were an operation of ovariotomy on the bitch, by Dr. F. E. Freeman; simple castration, by Dr. R. E. Freeman; cutting off two first upper molars, by Dr. C. L. Blakely, and several cases of lameness and an illustration of an easy method of casting a cow.

The regular business meeting was called to order, after a banquet at the "Elmwood," at the home of Dr. Joly, by President Salley, at 8.40 P. M., and the roll called showed the following

members present: Drs. F. L. Russell, F. E. Freeman, R. E. Freeman, L. S. Cleaves, A. W. Cleaves, I. L. Salley, A. Joly, W. E. Fairbanks, John Darling, and C. L. Blakely.

The minutes of the previous meeting were read and approved.

Dr. Geo. B. Wescott, of Portland, and Dr. John Darling were admitted to membership in the Association.

The Association listened to a very able paper by Dr. F. E. Freeman, of Rockland, entitled "The Veterinarian's Relation to his Client," which was freely discussed and voted an exceedingly interesting and instructive article.

Dr. C. L. Blakely read a paper entitled "An Operation for Abscess of the Guttural Pouches."

After spending considerable time in pleasant discussion of numerous cases in our every-day practice, the Association voted to meet in July with Dr. Freeman, at Rockland, and adjourned at a late hour. C. L. BLAKELY, M. D. V., *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The semi-annual meeting of this association will be held at the Animal Quarantine Station, Athenia, N. J., July 9th, 1903, at 10 A. M. It is a new departure for the Association to convene in other than the large cities of the State; however, the desire of a large number of members to visit the Animal Quarantine Station for the Port of New York and the unanimous vote of the Association to accept the invitation of the Secretary and meet at Athenia is an assurance of a well-attended meeting. The committee of arrangements have been working in a faithful manner and an interesting programme has been arranged.

Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, will be in attendance and address fellow-members of the profession. In addition to Dr. Salmon's address, there will be one or two papers read by members of the Association.

Arrangements have been made for a clinic, and the Superintendent of the Quarantine Station will conduct those in attendance through the various buildings and about the station grounds, giving a practical demonstration of the system in vogue for the quarantining of imported live stock. Arrangements have been made with a Newark caterer to serve luncheon upon the grounds at a moderate cost. Those living within driving distance of Athenia will be pleased to learn that accom-

modations have been provided for stabling and feeding horses. The Athenia depot of the Newark Branch of the Erie R. R. adjoins the Quarantine Station. Trains on this branch leave Chambers St., New York, for Athenia at 8.08, 9.45, 11.30 A. M. and 1.50 P. M., and arrive at Athenia about 55 minutes later. The same trains leave Newark at 8.45, 10.17 A. M. and 12.05 and 2.25 P. M., arriving at Athenia about 20 minutes later. Trains on the Boonton Branch of the D., L. and W. R. R. leave Barclay St., New York, for Athenia at 10.20 A. M. and 12.20 P. M.

Members of the profession from States other than New Jersey will be cordially welcomed at this meeting.

GEORGE W. POPE, *Secretary.*

IOWA-NEBRASKA STATE VETERINARY MEDICAL ASSOCIATION.

At the recent annual meeting of this Association, President S. H. Kingery, of Creston, delivered the following address:

"It is with great pleasure I am privileged to open this the fourth annual meeting of the Iowa-Nebraska State Veterinary Medical Association, and to welcome one and all of my professional associates, and all others who may be present.

"The advantages of our organization are many. It not only gives practitioners the opportunity of acquaintanceship, but promotes the advancement of scientific research, which we are all deeply interested in. It is with satisfaction we note the progress of the profession in these two great States, and, while we are progressive, we have much to do before we have acquired the highest point of proficiency, and the veterinarian of to-day must be studious and industrious. To the veterinarian, this is preëminently the age of opportunity. Never before did the world offer anything like the same open field as at this moment—not in the clamor of the street, not in the plaudits of the throng, but in ourselves are triumph and defeat. The past year I am sure has been a prosperous one to the profession. Those influences that existed a few short years ago, that made men "scorn delights," now have gone glimmering with the things that were, and the live-stock industry of these two States, as well as the United States, is back in the column where it justly belongs, and with it increased business for the veterinarian, and a corresponding bank account. I have honestly been told there are a great number of the profession in both States who have invested their surplus in paying propositions. The aspect for

the future is certainly large—a future having in store for the students among us much more than the careless ones should command, for much more is expected of the veterinarian of to-day than of our predecessors a few years ago.

"As your presiding officer, there are many subjects of interest to which I should like to call your attention, among them being sanitation, veterinary inspection of milk and meat, and a thorough inspection by competent veterinarians of the animals that produce this supply. These are questions that concern every citizen of Nebraska as well as the veterinarian, but because of the excellent programme our Secretary has arranged, which must be carried out, and feeling sure that this address is long enough—of the kind—I shall take occasion to occupy your time only a few moments longer and then subside.

"The veterinarians of Nebraska are to be congratulated by virtue of being instrumental with His Excellency the Governor and your State Legislature in creating the office of State Veterinarian, and also to have it filled by such an able man as Dr. Thomas.

"We will have with us to-morrow Prof. Burnett, of the University of Nebraska, who will give us an able demonstration of the essential points of judging cattle, and I sincerely hope you will all avail yourselves of the opportunity to attend. In conversation with your State Veterinarian, Dr. Thomas, I find that he was unable to present for demonstration and autopsy the case of maladie du coit, which we all would have deeply appreciated, for, as our Secretary has truly said in his circular letter, that very few of us have had the privilege of seeing.

"We are indebted to Dr. Ramacciotti for the clinic he has prepared and the voluntary use of his infirmary, together with all necessary instruments and appliances. Last, but not least, to that prince of good fellows and honorary member, Mr. Boyd, for the sumptuous lunch participated in by all. In conclusion, I wish to thank all of you who have done so much toward the success of this meeting, and fully realizing the mutual benefits derived from our annual meetings, I trust this will prove no exception to those held in the past. I thank you."

MASSACHUSETTS VETERINARY ASSOCIATION.

At the regular meeting of the Massachusetts Veterinary Association held at the Boston Veterinary Hospital, Wednesday evening, May 27th, the following resolutions were adopted:

WHEREAS, One of the objects of this Association, according to its Constitution, is "to use its utmost influence for the advancement of the veterinary profession, both as a body and as individuals;" and

WHEREAS, It has come to the notice of this Association that certain official positions, requiring on the part of their incumbents a practice of veterinary science, are now filled by laymen; be it

Resolved, That "the advancement of the veterinary profession both as a body and as individuals" demands the employment of *graduated veterinarians* in all positions where veterinary science is practiced; that the employment of laymen in such positions is prejudicial, not only to the veterinary profession, but also to the public welfare; that such employment should be avoided whenever practicable, and by the appointment of *graduated veterinarians* to such positions recognition of the value of veterinary science to the public interest be *officially* established.

J. F. WINCHESTER, D. V. S.
HOWARD P. ROGERS, M. D. V.
JAMES B. PAIGE, D. V. S.
L. H. HOWARD, D. V. S.
} *Committee.*

NEWS AND ITEMS.

DR. ROSCOE R. BELL was the veterinary inspector of the recent Brooklyn Horse Show, the most successful exhibition ever held by the association.

DR. CARL W. GAY, of the Iowa Agricultural College, Veterinary Department, Ames, Iowa, is spending his vacation on the Brookmont Farms (Cook ranch), at Odebolt, Iowa.

DR. M. H. REYNOLDS, of the University of Minnesota, is spending a two months' vacation in the new laboratory of bacteriology and hygiene at the Michigan Agricultural College, Lansing.

C. T. SMITH, an unlicensed veterinarian of New Jersey, committed suicide in Jersey City one day last month. Smith practiced in Paterson prior to the passage of the act to regulate the practice of veterinary medicine in New Jersey. When the law went into force he moved to Jersey City, where he got employment with the Hudson Coal Company.

A PLAN TO STOP THE DOCKING OF HORSES.—Foolish owners of harness horses believe their horses look better with their

tails cut off short. To gratify silly vanity and bad taste, thousands of horses are mutilated and tortured every year. The bony part of the tail is cut off short. This cutting in two of the prolongation of the backbone causes intense agony when the operation is performed. What is worse, it deprives the horse of its weapon against flies, and condemns the poor animal to a miserable old age. The man thoughtless enough to dock a horse is also thoughtless enough to turn it away when it gets old, condemning it to spend its last years in misery, a victim of flies on the farm or in the huckster's wagon. Human decency has feebly endeavored to stop by law this abuse of helpless horses. The *Evening Journal* suggests that the law against docking horses be made a reality instead of a farce, at least in this State. At present it is necessary to prove that the owner actually mutilated his horse. Convictions are so rare as to amount to nothing. Let a law be passed imposing a fine of one hundred dollars upon any man having a docked horse in his possession under a certain age. The law, of course, could not refer to horses mutilated previous to the passing of the bill. But looking into the future, it could apply the fine one year from now to any one owning a docked horse one year old or younger. Two years from the passing of the law the fine should apply to a horse two years old or younger, and so on, extending the age limit year by year after the passage of the law, until it would include horses of any age. Any competent veterinary surgeon can swear positively to the age of a horse—at least up to the age of six. The docking of horses would very soon stop if the mere having of a docked horse in one's possession meant a loss of one hundred dollars. To make doubly sure it might be well to make the fine even larger, with imprisonment as a punishment for a second offence. If two or three of the big States would pass such a law as that suggested, it would stop all docking of horses by dealers. It would stop docking horses also by the very rich, who often own residences in different States. Docking would cease to be a fashion, and it would soon die of its own accord. We hope that a legislator will be found in this State to introduce such a law. We should be glad to aid in its passage. In the close season a man is fined for having certain kinds of game in his possession; it is not necessary to prove that he shot it. If we really want to stop the mutilation and torture of horses, it must be made a criminal offence to possess such a mutilated horse.—(*Editorial in New York Evening Journal, June 10.*)

THE OXYGEN MILK FEVER CURE—REMARKABLY SUCCESSFUL RESULTS.—Messrs. Tennant & Barnes, veterinarians, of London, Ont., during the past month have been putting to test the oxygen cure for milk fever discovered and successfully practiced by M. Knusel, of Lucerne, an account of which appeared in the *Farmer's Advocate* for February 5th last, and which excited more than a passing interest among stockmen. They had had very gratifying experience with the iodide of potassium udder injection treatment, which proved a very great advance upon former methods, though to the progressive veterinarian it could not be said to have closed the chapter on the treatment of this dread bovine disease, consequently there was reason to welcome the advent of a remedy that would reach still nearer the ideal towards which every practitioner strives, and Messrs. Tennant & Barnes decided to give the oxygen treatment a trial. They secured a small cylindrical metal tank, holding 125 gallons of the chemically pure gas compressed, with a device for measuring. Up to the present time they have treated six cases. The *Farmer's Advocate* has, naturally, followed this trial with a great deal of interest, and take pleasure in submitting the results for the perusal of veterinarians and stockmen, and especially dairymen, to whom milk fever is the constant menace and despair. *Case No. 1* was a pure-bred Holstein cow, calved about 24 hours; down and unable to get up; semi-comatose, with all the other symptoms of milk fever. Saw her about 9 A. M. and injected about two quarts of oxygen into each quarter of the udder. Left at once. In four hours she was on her feet. Next morning found her all right, but gave stimulant. She made a complete recovery, milking as well or better than formerly, with no udder trouble; no other treatment nor diet restriction. *Case No. 2*—Grade Shorthorn cow, very fat, heavy milker, calved 30 hours, unable to get up, delirious and very sick, heavy breathing and pulse imperceptible. Gave similar dose to No. 1, and in 20 minutes after the injections respirations dropped 15 to the minute, and became normal; delirium left, and in three hours she got up and went on doing all right and milking. In about a week's time she was sold on the public market for $55. *No. 3*—Jersey, seven years old, fat and a very rich milker; calved about 18 hours. Found lying flat on side, tremendously bloated; respiration fast and labored; pulse, 90; temperature normal (a bad symptom); completely comatose; as bad a case as they ever had in their practice. "It's nae use," said the owner, "she's deeing noo." Turned on the oxygen without measuring, until

the udder was completely distended, and the teats were tied with braid to prevent its escaping; a desperate case and heroic treatment. In about half an hour cow swung on to her side and became perfectly conscious. In a short time was found lying in normal condition, bloat gone. Owner massaged udder thoroughly, and size slackened. About two hours after treatment she got up and walked over a pair of bars. Pulse down to 60 in a little over an hour, respiration natural; milked all right afterwards. *No. 4*—Grade cow, calved 25 or 30 hours, down and unable to rise; at 10 A. M. paralyzed and moaning; same amount of oxygen given as in first two cases; in little over an hour was up and looking for calf; ate bran mash and hay in afternoon, and next morning all right. *No. 5* was a lighter case, but resulted equally satisfactorily. *No. 6*—A very fat grade Shorthorn cow, and very heavy milker, calved about 18 or 20 hours. About 6 A. M. owner noticed her weak and staggering; had her bled and dosed with salts, but she went down rapidly and became totally comatose. At 9 P. M. owner, becoming frightened, called Drs. Tennant & Barnes, who, seeing it was a desperate case, filled the udder with oxygen without measuring it, distending it so that they had to put tape around points of teats to prevent escape of the gas. In half an hour respiration, though somewhat quickened, was otherwise natural, continued improving, and in two hours was conscious, lying in a natural position, and in four hours from injection of the oxygen was on her feet, and when seen next morning was all right. In all the above cases there had been no preventive measures, and there was no other treatment, ice nor mustard used. The udders were massaged and no milk removed for 24 hours, and then just enough to relieve the udder. Teats were washed and disinfected before inserting the teat probe or tube admitting the oxygen. No change was made in the feeding and watering. These results are remarkably encouraging, and more than realized the most sanguine expectations of the treatment. That it will now be more generally and thoroughly put to the test may be taken for granted. Dr. Tennant remarked that so far as they had gone it had proved just as much in advance of the iodide of potassium treatment as it had surpassed the old methods of dealing with the disease.—(*Farmer's Advocate, Winnipeg, Man., June 5.*)—[NOTE.—E. H. Lehnert, D. V. S., of the Connecticut Agricultural College, Storrs, Conn., testifies to the efficiency of the oxygen treatment in the May issue of the *Journal of Comp. Med.*, citing one case and giving his *modus operandi*.—EDITOR REVIEW.]

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; foreign countries, $3.60; students while attending college, $2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW *in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.*

Now that the hot weather is here veterinarians are constantly confronted by "scratching" dogs, who soon convert a small itching spot into a large abraded surface. For the relief of this condition nothing is so satisfactory as "Epicarin--Veterinary," an ideal dermal parasiticide. Two drachms of Epicarin, in an ounce each of alcohol and glycerine, makes a beautiful clear amber colored lotion that is readily applied to the skin and allays irritation. This, and many other equally valuable therapeutic agents, may be procured from Farbenfabriken of Elberfeld Co., No. 40 Stone Street, New York.

SYRUP EUCALYPTUS COMPOUND, prepared by The Norwich Pharmacal Company (see page 9, ad. dept.) is fast gaining a permanent place in veterinary practice. It is an efficient remedy for coughs, and the price makes it possible to use it on all classes of patients.

A BALANCED RATION FOR DOGS is an essential to their health, especially during the summer months; and it is gratifying to know that Spratt's Dog Biscuits and Puppy Cakes fill the demand. Either are suited for dogs of all ages; the Puppy Cakes being especially suited to puppies and the smaller breeds of dogs, as they seem to be a refined edition of the Dog Biscuits and are more easily broken up and masticated. During treatment for skin troubles, dogs kept entirely on a diet of the "Biscuits" do well, as the bowels are inclined to be active when this food is fed exclusively.

ASSISTANTSHIP WANTED.

A young man (23), graduate of McKillip Veterinary College, desires position as assistant to practicing veterinarian, vicinity of New York. Address C. B. J., care of BYRNE, 415 West 47th St.

AMBULANCE WANTED.

Equine, new or second hand. Dr. J. F. DEVINE, Goshen, N. Y.